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CAUVERY BHAVAN, KEMPEGOWDA ROAD
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Through E-Procurement

TENDER FOR THE WORK OF

DESIGN, CONSTRUCTION, AND COMMISSIONING OF **20 MLD STP BASED ON INTEGRATED FIXED FILM ACTIVATED SLUDGE (IFAS-PROCESS) WITH BNR, TERTIARY TREATMENT AND ODOUR CONTROL UNITS AT KORAMANGALA** INCLUDING 7 YEARS OF OPERATION & MAINTENANCE (TURNKEY CONTRACT)

VOLUME 4 of 4

(PRICE SCHEDULE)

OCTOBER – 2025

Office of the *Chief Engineer (WWM-E)/CE (UWP)*
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CONTENTS			
Volumes	**Part**	**Sections**	**Description**
Volume-1	**Bidding Procedures**	**Section-1**	Invitation for Tenders (IFT)
		Section-2	Instructions to Tenderers (ITT)
		Section-3	Qualification Information and Evaluation Methodology
		Section-4	Form of Tender, Letter of Acceptance, Notice to Proceed with the work and Agreement Form
		Section-5	Conditions of Contract (CC) and Special Conditions of Contract (SCC)
		Section-6	Contract Data and Appendix to Special Conditions of Contract
		Section-7	Specifications
		Section-8	Drawings
		Section-9	Price Schedule
		Section-10	Format of Bank Guarantee for Security Deposit
Volume-2	**Technical Specifications and Technical Schedules**	**Section - 7**	**Specifications**
			Part-1: Project Details
			Part-2: The Site
			Part-3: General Requirements
			Part-4: General Workmanship, Materials and Design Requirements for Plant
			Part-5: Process Requirements
			Part-6: General Electrical Requirements
			Part-7: Instrumentation Control and Automation Works
			Part-8: General Mechanical Requirements
			Part-9: General Painting and Protection Requirement
			Part-10A: Technical Specifications for Civil, Structural Works
			Part-10B: Particular Technical Specifications for Civil and Structural Works
			Part -11: Particular Mechanical Requirements for TSPS, STP
			Part-12: Particular Electrical Plant Requirements
			Part-13: Particular Instrumentation & Control Requirements

CONTENTS			
Volumes	**Part**	**Sections**	**Description**
			Part-13B: Particular Operation and Control Philosophy
			Part 14: Inspection, Testing and Commissioning Requirements
			Part 15: Training & Advisory Requirements
			Part 16: Operation & Maintenance
			Part 17: Handing Over
			Part 18: Environmental Management Plan (EMP) and Environmental Monitoring Plan (EMoP)
		Section- 7A	**Form of Technical proposal**
		Section- 7B	**Technical Schedules**
			Technical Schedule - I: Construction Programme
			Technical Schedule-II: Proposed Plant Details
			Technical Schedule-III: Instrumentation Control & Automation Equipment's
			Technical Schedule-IV: Electrical works
			Technical Schedule V: Operating Details
			Technical Schedule VI: Schedule of Subcontractors
			Technical Schedule VII: Quality Assurance and Quality Control Plan
			Technical Schedule VIII: Environmental Management Plan
			Technical Schedule IX: Safety Plan
			Technical Schedule X: Functional Guarantees of the Plant
			Technical Schedule XI: Statement of Deviations from the Technical Specifications
Volume-3	**Drawings**	**Section - 8**	Drawings
Volume -4	**Price Schedule**	**Section -9**	Price Schedule

Volume 4 - Price Schedule
Name of the STP : 20 MLD STP at Koramangala

This Price schedule shall be filled and submitted at the time of the signing the Contract for successful bidder.

1) The price proposal is divided into separate price schedules as follows, for the works defined in Volume 2 and Volume 3 of the tender document:
   Code 01: Design, Drawing and Documentation services as defined for STP of 20 MLD capacity plant including TSPS at Koramangala.
   Code 02: Providing and Execution of Civil Works and Other Site Facilities as defined for STP of 20 MLD capacity plant including TSPS at Koramangala.
   Code 03: Supply and Installation of Mechanical Works and Other Site Facilities as defined for STP of 20 MLD capacity plant including TSPS at Koramangala.
   Code 04: Supply and Installation of Electrical Works and Other Site Facilities as defined for STP of 20 MLD capacity plant including TSPS at Koramangala.
   Code 05: Supply and Installation of Instrumentation, Control & Automation Works including Laboratory Equipments as defined for STP of 20 MLD capacity plant including TSPS at Koramangala.
   Code 06: Commissioning of Mechanical, Electrical and Instrumentation, Control & Automation Works for entire STP plant process including FAT & SAT of 20 MLD capacity plant including TSPS at Koramangala.
   Code 07: Operation and Maintenance of STP of 20 MLD capacity plant including TSPS along with required manpower, chemicals, maintenance, transportation and disposal of screened material, grit and sludge cost, but excluding electricity charges at Koramangala for Seven (7) years.
2) Contractor to note that, provided price schedules may not fully detail the construction specifics details, plant, materials to be supplied, and services to be performed under each item / sub-items of the works. Contractors' quoted rates and prices shall be deemed to inclusive of all provisions of the contract. By completing the price schedule, the contractor acknowledges having reviewed the price schedule, including the excel links, and confirms that the quoted prices for the work comply fully with all contract requirements and provisions.
3) Items left blank are deemed to have been included in other items. The total for each schedule, and the total of the grand summary, shall be deemed to be the total price for executing the works in complete accordance with the contract, whether or not such each individual item has been priced.
4) Items for the plant included in Schedule 3 exclude associated civil, building, and other construction works. All such items and materials are to be included under the relevant item for civil works.
5) Contractor is required to quote for recommended spare parts, accessories, tools, testing equipment, and any other works in schedule 8. The Employer shall finalize the requirement of these items, and only the total amount based on this requirement by the Employer shall be part of the contract.
6) At the start of the O&M period of STP, Employer may depute one selected operator for STP to supervise the O&M works. The contractor shall train the Employer-deputed operators, and coordination shall be maintained between the contractor's operators and the Employer-deputed operators. This will help in transferring knowledge and technologies adopted and will also help the Employer maintain the plant during/after handing over. The salary for the deputed operators shall be borne by the Employer.
7) All insurances as per the bid documents are to be obtained and maintained by the contractor.
8) Contractor shall pay O&M staff wages not less than those notified by the Department of Labour, GoK.

Volume 4 - Price Schedule
Name of the STP : 20 MLD STP at Koramangala

9) Contractor is required to quote balanced and realistic prices for each item specified in the price schedule. Quoted prices for each item shall reflect the true cost of completing that specific item of work in accordance with the contract requirements. Post-award, without changing the overall contract value as signed, the Employer reserves the right to adjust individual item prices if any are found to have been quoted unrealistically, based on fair market value and documented costs of similar works or supplies.

10) Any exemptions/benefits during the course of the execution of the work shall be passed on to the Employer.

Name of the STP : 20 MLD STP at Koramangala					
Code 01: Design, Drawing and Documentation services as defined for STP of 20 MLD capacity plant including TSPS at Koramangala.					
Item	**Description**	**Quantity**	**Price (INR)**	**GST (INR)**	**Total Price including GST (INR)**
(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6) = (4) + (5)**
1.0	**Design, Drawings, Reports and Documentation.**				
1.1	**Process Design and drawings as defined in Volume 2 and Volume 3 of the Bidding Document.**				
1.1.1	Complete site survey works including survey layout showing complete details of the site with levels and report, complete site geotechnical investigation works with bore hole location plan and reports, electrical resistivity test report.	LS			-
1.1.2	Process Description, Process Flow Diagram, Process Design Calculations, 2D Plant Layout, 3D Plant Layout, Complete Plant Piping Layout, Hydraulic Design Calculations, Hydraulic Flow diagram, P&IDs, Mass Balance, Plant water, scum & drain Philosophy, potable water usage plan, tanker filling station and other design details as required and specified in tender document.	LS			-
1.1.3	3D model walkthrough video showcasing the entire plant layout and its facilities.	LS			-
1.1.4	Single Line diagrams and Electrical drawings complete.	LS			-
1.1.5	Operation Philosophy, Control Philosophy, I/O List, Cause and Effect Matrix, Real time online water quality monitoring systems, Auto samplers system complete.	LS			-
1.1.6	Any other necessary document which Bidder feels necessary for project completion needs to be added including all essential Investigation, Model Study (if required) ,etc. required to complete the Works.				
a		LS			-
b		LS			-
c		LS			-
Sub Total of 1.1			**-**	**-**	**-**
1.2	**Civil, Architectural & Structural Designs and Drawings as defined in Volume 2 and Volume 3 of Bidding Document**				
	TSPS Works				
1.2.1	Inlet manhole & chamber, Trash & Coarse Screen channels, Effluent chamber, Overflow chamber, Wet well with superstructure, Valve & Flow meter chambers, Thrust block and Anchor blocks etc.,	LS			-
	Inlet Works				
1.2.2	Inlet Chamber, Fine Screen Channel, Screen Effluent/ Grit Basin Distribution Channel, chambers, RCC Staircase, etc.,	LS			-
1.2.3	Vortex Grit Basins & chamber, Grit Basin effluent channel, Grit Classifier arrangement, chambers, RCC Staircase, etc.,	LS			-
1.2.4	Parshall Flume, drop chamber, connecting arrangement from Inlet works to Bioreactor, RCC Staircase etc.,	LS			-

Name of the STP : 20 MLD STP at Koramangala					
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Item	**Description**	**Quantity**	**Price (INR)**	**GST (INR)**	**Total Price including GST (INR)**
(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6) = (4) + (5)**
	Bioreactor				
1.2.5	Bioreactor flow distribution channel, Anaerobic Zones, Anoxic Zones, Aerobic Zones, Aeration Basin Effluent Channel, MLR Feed, RAS inlet arrangement, Valve & flow meter chamber, Overflow & Bypass chamber, RCC Staircase, etc.,	LS			-
	Blower Building				
1.2.6	Process Air Blower Building, Valve chamber, Supports for air piping, RCC Stair case etc.,	LS			-
	Secondary Clarifiers				
1.2.7	Inlet arrangements from aeration basin outlet, Secondary Clarifier Distribution boxes, Secondary Clarifiers, Scum collection pit, Desluding valve chamber, RCC Staircase etc.,	LS			-
1.2.8	RAS pumping station including Valve & flow meter chambers, RCC Staircase, etc.,	LS			-
	Disc Filter				
1.2.9	Disc Filter Influent chamber, Disc Filter units and Disc Filter Effluent channel, Backwash water collection arrangement and disc filer building etc.,	LS			-
	Chlorine Contact Tank				
1.2.10	Chlorine Contact Tank, Inlet chamber, distribution chamber, Effluent Channel/pipe, flow meter chamber, RCC Staircase, Outfall Structure, etc.,	LS			-
1.2.11	Chlorine and Alum building etc and any other chemicals required as per the Process design, etc.,	LS			-
1.2.12	Treated water storage sump / Pump Station and inlet flow arrangement, chamber etc.,	LS			-
	Odour Control Units				
1.2.13	Odour Control Units, Filter Beds, Valve chamber, Supports for odour piping & Blowers, Supports and foundation for tanks, RCC Stair case etc.,.	LS			-
	Sludge Dewatering				
1.2.14	Sludge Dewatering Building including sludge storage, chambers, RCC Stair case etc.,	LS			-
1.2.15	Dewatering Feed sump and Pumping Station, chambers etc.,	LS			-
1.2.16	Scum Pit, Sump and Pump Station, Chamber etc.,	LS			-
1.2.17	Plant Drain Sump and Pump Station, Chamber etc..	LS			-
1.2.18	Plant water Sump and Pump Station, Chamber etc.,	LS			-
	Substation For STP & TSPS				
1.2.19	Switch gear room, Electrical Sub station.	LS			-
1.2.20	Transformer yard.	LS			-
1.2.21	Plant D.G. Room.	LS			-
	Utility Buildings				
1.2.22	Administration Cum Laboratory Building & SCADA Building (Two Floors) (For SCADA control room, refer Particular ICA requirements).	LS			-
1.2.23	Guard Room (Security Room).	LS			-

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Item	**Description**	**Quantity**	**Price (INR)**	**GST (INR)**	**Total Price including GST (INR)**
(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6) = (4) + (5)**
1.2.24	Parking Shed as defined in Volume 2 and Volume 3 of the Bidding Document.	LS			-
	Other Utilities				
1.2.25	Name boards for all process and non process units and building in kannada / English.	LS			-
1.2.26	All demolish works as required and defined in Volume 2 & Volume 3 of the Bidding Document.	LS			-
1.2.27	Plant Internal Roads with drains and path ways along road side and between the connecting roads as defined in Volume 2 and Volume 3 of the Bidding Document.	LS			-
1.2.28	Approach Road to STP, TSPS.	LS			-
1.2.29	Ground improvement plan for site grading.	LS			-
1.2.30	Electric cable trenches inside the STP site.	LS			-
1.2.31	Plant Scale Model as defined in Volume 2 of the Bidding Document.	LS			-
1.2.32	Culverts and bridges as defined in Volume 2 and Volume 3 of the Bidding Document.	LS			-
1.2.33	Compound Wall / Retaining wall with gates as defined in Volume 2 and Volume 3 of the Bidding Document.	LS			-
1.2.34	RCC works for Nallah & flow diversion works as defined in Volume 2 and Volume 3 of the Bidding Document.	LS			-
1.2.35	Site retaining structure as defined in Volume 2 and Volume 3 of the Bidding Document.	LS			-
1.2.36	Pile foundation as defined in Volume 2 and Volume 3 of the Bidding Document.	LS			-
1.2.37	Additional Backfill for entire Project to meet the FGL specified in the Volume 2 and Volume 3 of the Bid Document.	LS			-
1.2.38	Complete Plant Landscaping.	LS			-
1.2.39	Tree Plantation.	LS			-
1.2.40	**Any other works which Bidder feels necessary for project completion needs to be added including all essential Investigation, etc. required to complete the Works under 1.2**				
a		LS			-
b		LS			-
c		LS			-
d		LS			-
e		LS			-
Sub Total of 1.2			**-**	**-**	**-**
1.3	**Mechanical Design, Drawings, and Documentation as defined in Volume 2 of the Bidding Document.**				
	TSPS				

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(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6) = (4) + (5)**
1.3.1	Inlet & Effluent chambers, Overflow chamber, Screen channels with necessary screening arrangements (Trash & Coarse screen), Conveyors, Screening collection arrangement, Sluice gates, weir gates and Inlet & Overflow piping with fittings and Hardware with piping and all allied works complete.	LS			-
1.3.2	Wet well with superstructure & Pumping system , Submersible pumps with suitable valves and piping arrangements and Hardware and all allied works complete.	LS			-
1.3.3	Material Handling system with suitable Cranes and hoist arrangements with Hardware and all allied works complete.	LS			-
1.3.4	Miscellaneous works such as flushing arrangements, dewatering, ventilation system and odour collection system including Hardware all allied works complete.	LS			-
	STP				
1.3.5	Inlet chamber and Fine Screen Channel, Overflow chamber, Screen Effluent / Grit Basin Distribution Channel with Sluice gates, weir gates, Stop logs, Inlet & Overflow piping with fittings, flushing arrangement, including Hardware and all allied works complete.	LS			-
1.3.6	Screen chamber with effluent channel, drain piping and Fine screening, Conveyors, Screening collection arrangement, flushing arrangement, including Hardware and all allied works complete.	LS			-
1.3.7	Vortex Grit mechanism with grit classifier & washing mechanism, Conveyors, Grit collection arrangement, sluice gates, Stop logs, flushing arrangement, including Hardware and all allied works complete.	LS			-
1.3.8	Aeration Basin with diffused aeration arrangement with piping, Sluice gates and weir gates, Stop logs, flushing arrangement, including Hardware and all allied works complete.	LS			-
1.3.9	Anaerobic Zone Inlet arrangement including pipework, Submersible mixer arrangement and Material Handling Equipment, flushing arrangement, scum collection system, Hardware with piping and all allied works complete.	LS			-
1.3.10	Anoxic zone Inlet arrangement including pipework, Submersible mixer arrangement and Material Handling Equipment, flushing arrangement, scum collection system, Hardware with piping and all	LS			-
1.3.11	Deareation zone with MLR pump set, Inlet arrangement including pipework, Submersible mixer arrangement and Material Handling Equipment, flushing arrangement, Hardware with piping and all allied works complete.	LS			-
1.3.12	Aeration Zone with Fine Bubble Diffuser Aeration system arrangement, Pipe grid, Drop legs, piping arrangements, Drain pump sets, Electric hoist, sluice gates, flushing arrangement, scum collection system, Material Handling Equipment, piping and valves including Hardware and all allied works complete.	LS			-

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Item	**Description**	**Quantity**	**Price (INR)**	**GST (INR)**	**Total Price including GST (INR)**
(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6) = (4) + (5)**
1.3.13	Process Air Blower Building with blowers, Air Coolers, EOT Crane, Service water & blower cooling arrangement, Piping and valves, Material Handling Equipment, Ventilation system, Hardware and all allied works complete.	LS			-
1.3.14	Alum solution preparation and dosing which includes minimum of preparation and dosing pump sets to feed maximum average doses efficiently, agitators, mixing arrangement, flushing arrangement, Channel mounted mixer for alum mixing, Material Handling Equipment, Ventilation system, Hardware with piping and all allied works complete including bulk storage tank and containment structure in case of a spill.	LS			-
1.3.15	Inlet & outlet piping, Distribution Chamber for Secondary Clarifiers with Inlet & Outlet sluice gates, stop logs, weir arrangement, flushing arrangement, piping and valves including Hardware and all allied works complete.	LS			-
1.3.16	Inlet & Outlet piping, Secondary Clarifiers mechanism, Bridge, scum collection with desludging arrangements, Material Handling Equipment, flushing arrangement, piping and valves including Hardware and all allied works complete.	LS			-
1.3.17	Inlet & Outlet piping, Disc Filter Influent & Effluent chamber sluice gates, Weir gates, Stop logs, Disc Filter units with chemical cleaning arrangements. Backwash water system and collection arrangement etc and all allied works complete.	LS			-
1.3.18	Scum pumping station general arrangement, Pump sets, flushing arrangement, scum Handling Equipment, Ventilation system, Hardware with piping, Valves and all allied works complete.	LS			-
1.3.19	Chlorine & other chemical dosing arrangement, spill containment bund, flushing arrangement, Material Handling Equipment, Ventilation system, Hardware with piping and all allied works complete.	LS			-
1.3.20	Inlet & Outlet piping, Chlorine Contact Tank & Outfall structure with sluice gates, weir gates, Stop logs, mixing arrangement, hardware with piping, valves and all allied works complete, Disk filters.	LS			-
1.3.21	Dewatering feed pumping system, Submersible mixer arrangement, Sludge feed Pump sets, flushing arrangement, Ventilation system, Material Handling Equipment and Hardware with piping, valves and all allied works complete.	LS			-
1.3.22	Polyelectrolyte dosing systems for sludge dewatering, stirrer arrangement, feeding arrangement, Preparation & Storage tanks, Dosing Pump sets, flushing arrangement, Material Handling Equipment, Ventilation system, Hardware with piping and all allied works complete.	LS			-
1.3.23	Sludge dewatering units, sludge cake screw conveying system with cut gate arrangement and hopper & Collection system, Material Handling Equipment for sludge dewatering units, flushing arrangement, Ventilation system, Hardware with piping and all allied works complete.	LS			-

Name of the STP : 20 MLD STP at Koramangala					
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Item	**Description**	**Quantity**	**Price (INR)**	**GST (INR)**	**Total Price including GST (INR)**
(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6) = (4) + (5)**
1.3.24	Inlet & Outlet piping, Plant Drain Sump and Pump Station, Submersible pump sets, Material Handling Equipment,, Hardware with piping, Valves and all allied works complete.	LS			-
1.3.25	Inlet & Outlet piping, Treated water storage Pump Station, Submersible pump sets, Material Handling Equipment, Hardware with piping, Valves and all allied works complete.	LS			-
1.3.26	Inlet & Outlet piping, Plant water Pump Station, Submersible pump sets, Material Handling Equipment, Sluice gates, Weir gates, Stop log gates, Hardware with piping, Valves, All Plant Piping works and all allied works complete.	LS			-
1.3.27	Inlet & Outlet piping, Tanker filling station, Submersible pump sets, Material Handling Equipment, Hardware with piping, Valves and all allied works complete.	LS			-
1.3.28	Flushing arrangement for all chemical & Sludge Material Handling systems, Dewatering Pumps including piping and all allied works in all sludge & Chemical Material Handling pump houses complete.	LS			-
1.3.29	Potable water system including pumps with Hardware, piping, Valves and all allied works complete.	LS			-
1.3.30	Fire Fighting system for the whole plant (inclusive of fire alarm, fire detection, fire extinguishing system), Tools Kit, Air conditioning system for SCADA control room & Administration and Laboratory Building and all allied works complete.	LS			-
1.3.31	Air intake blowers with piping and valves, filters beds, Bio-filters, suction-filters, air duct work, mist eliminators, and dehumidifiers and all allied works complete for Odour Control Units.	LS			-
1.3.32	Any other works which Bidder feels necessary for project completion needs to be added including all essential Investigation, etc. required to complete the Works under 1.3.				
a		LS			-
b		LS			-
c		LS			-
d		LS			-
e		LS			-
Sub Total of 1.3			**-**	**-**	**-**
1.4	**Electrical Design, Drawings and Documents as defined in Volume 2 and Volume 3 of the Bidding Document.**				
1.4.1	Single Line Diagram (HT & LT System).	LS			-
1.4.2	Electrical Load List, Sizing calculations for 11kV Switchgear Panel, Transformers, DG Set, LT Panels (PCC/MCC), HT/LT Cables, Earthing & Lightning Protection etc.,	LS			-
1.4.3	Electrical Equipment Layout and GA Drawing.	LS			-
1.4.4	Cabling Layout for the Plant (Indoor & Outdoor).	LS			-

Name of the STP : 20 MLD STP at Koramangala					
Code 01: Design, Drawing and Documentation services as defined for STP of 20 MLD capacity plant including TSPS at Koramangala.					
Item	**Description**	**Quantity**	**Price (INR)**	**GST (INR)**	**Total Price including GST (INR)**
(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6) = (4) + (5)**
1.4.5	Lighting, Earthing and Lightning layout (Indoor & Outdoor).	LS			-
1.4.6	Guaranteed Technical particulars (GTP), GA, Control Wiring Diagrams, BOM & QAP of all equipment.	LS			-
1.4.7	Any other necessary document which bidder's feels necessary for project completion needs to be added including all calculations etc. required to complete the Works.				
a		LS			-
b		LS			-
c		LS			-
Sub Total of 1.4			**-**	**-**	**-**
1.5	**Instrumentation, Control, and Automation Design, Drawings and Documentation as defined in Part 7 and Part 13 in Volume 2 of Bidding Document**				
1.5.1	Instrumentation, Control, Automation (ICA) inclusive of complete field instrumentation, PLC based SCADA system, Functional Design Specifications (FDS) for Instrumentation, FDS for Control & Automation systems, and all other equipment required as per specifications, System Architecture Design, Instrument Data Sheets, Hook-up Diagrams for complete ICA works, Loop Diagrams, Cable Layout Drawings, Internal Wiring Diagrams for PLC cum RIO panels, Layout Drawing for Control Room, Software Design Specification (SDS), Test Plans and Procedures including set point list (For FAT and SAT), Calibration Procedures, Interoperability test reports, and all allied works complete as required under the specifications.	LS			-
1.5.2	Plant Asset Management System (PAMS) Software and its interface with STP PLC based SCADA system and Mobile app to streamline and enhance the tracking, maintenance, and management of all assets within the STP as defined in Volume 2.	LS			-
1.5.3	Laboratory Information Management System (LIMS) software with Sample Management, Workflow Automation, and Data Management. Optional modules for Electronic Lab Notebook, Instrument Integration, and Inventory Management, with modular expansion based on laboratory needs with Interfacing with STP PLC based SCADA system and with various laboratory instruments of the plant as defined in Volume 2.	LS			-
1.5.4	Any other necessary document which bidder's feels necessary for project completion needs to be added including all calculations etc. required to complete the Works.				
a		LS			-
b		LS			-
c		LS			-
Sub Total of 1.5			**-**	**-**	**-**

Name of the STP : 20 MLD STP at Koramangala					
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Item	**Description**	**Quantity**	**Price (INR)**	**GST (INR)**	**Total Price including GST (INR)**
(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6) = (4) + (5)**
1.6	**Tests on Completion of Design-Build as defined in Volume 2 of Bidding Document**				
1.6.1	For Effluent Quality.	LS			-
1.6.2	For Sludge Quality.	LS			-
1.6.3	For Grit Quality.	LS			-
1.6.4	For Odour Quality.	LS			-
1.6.5	For Noise Level.	LS			-
Sub Total of 1.6			**-**	**-**	**-**
1.7	**Tests prior to Contract Completion as defined in Volume 2 of Bidding Document**				
1.7.1	For Effluent Quality.	LS			-
1.7.2	For Sludge Quality.	LS			-
1.7.3	For Grit Quality.	LS			-
1.7.4	For Odour Quality.	LS			-
1.6.5	For Noise Level.	LS			-
Sub Total of 1.7			**-**	**-**	**-**
1.8	**As Built Drawings**				
1.8.1	Main Process Documents.	LS			-
1.8.2	Civil, Structural & Building Works and piping.	LS			-
1.8.3	Mechanical systems.	LS			-
1.8.4	Electrical systems.	LS			-
1.8.5	Instrumentation systems.	LS			-
1.8.6	Control and Automation System.	LS			-
1.8.7	Scale model of the plant inside the Admin building as defined in the tender document.	LS			-
Sub Total of 1.8			**-**	**-**	**-**
1.9	**Mandatory Documents to be furnished at various stages of the design works to meet the requirements specified in Volume 2 and Volume 3 of the tender document**				
1.9.1	Monthly Environmental Monitoring Reports.	LS			-
1.9.2	Monthly Project Progress Reports.	LS			-
1.9.3	Surge Analysis of Pumping Mains.	LS			-
1.9.4	Concept Design Report on Plant Process.	LS			-

Name of the STP : 20 MLD STP at Koramangala					
Code 01: Design, Drawing and Documentation services as defined for STP of 20 MLD capacity plant including TSPS at Koramangala.					
Item	**Description**	**Quantity**	**Price (INR)**	**GST (INR)**	**Total Price including GST (INR)**
(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6) = (4) + (5)**
1.9.5	Concept Design Report on Plant Hydraulics.	LS			-
1.9.6	Concept Design Report on Civil Works of the Plant.	LS			-
1.9.7	Concept Design Report on Structural Design Works of the Plant.	LS			-
1.9.8	Concept Design Report on Mechanical Works of the Plant.	LS			-
1.9.9	Concept Design Report on Electrical Works of the Plant.	LS			-
1.9.10	Concept Design Report on Instrumentation Works of the Plant.	LS			-
1.9.11	Concept Design Report on Control and Automation Works of the Plant.	LS			-
1.9.12	Report on Architectural Works of the Buildings of the Plant.	LS			-
1.9.13	HAZOP Study Reports.	LS			-
1.9.14	Detailed Study Report on Odour.	LS			-
1.9.15	Fault Level Calculations, Load Flow and Harmonic Studies.	LS			-
1.9.16	Energy Optimization Plan.	LS			-
1.9.17	FAT Reports.	LS			-
1.9.18	SAT Reports.	LS			-
1.9.19	Report on Plant Laboratory Setup.	LS			-
1.9.20	Implementation Report on Cyber Security.	LS			-
1.9.21	Operation & Maintenance Manuals.	LS			-
1.9.22	Training Programme and Manuals.	LS			-
1.9.23	**Any other necessary report which bidder's feels necessary for project completion needs to be added including all calculations etc. required to complete the Works.**				
a		LS			-
b		LS			-
c		LS			-
Sub Total of 1. 9			**-**	**-**	**-**
1.10	**Bidder shall list here details of additional items required.**				
1.10.1		LS			-
1.10.2		LS			-
1.10.3		LS			-
1.10.4		LS			-
Sub Total of 1.10			**-**	**-**	**-**
Total (Sub 1.1+1.2+1.3+1.4+1.5+1.6+1.7+1.8+1.9+1.10)			**-**	**-**	**-**

Name of the STP : 20 MLD STP at Koramangala					
Code 01: Design, Drawing and Documentation services as defined for STP of 20 MLD capacity plant including TSPS at Koramangala.					
Item	**Description**	**Quantity**	**Price (INR)**	**GST (INR)**	**Total Price including GST (INR)**
(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6) = (4) + (5)**

Name of the STP : 20 MLD STP at Koramangala					
Code 02: Providing and Execution of Civil Works and Other Site Facilities as defined for STP of 20 MLD capacity plant including TSPS at Koramangala.					
Item	**Description**	**Quantity**	**Price (INR)**	**GST (INR)**	**Total Price including GST (INR)**
(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6) = (4) + (5)**
2.0	**Civil Works**				
2.1	**Complete Civil Works and Building Works as defined in the Bidding Document**				
	TSPS Works				
2.1.1	Inlet manhole & chamber, Trash & Coarse Screen channels, Effluent chamber, Overflow chamber, Wet well with superstructure, Valve & Flow meter chambers, Thrust block and Anchor blocks etc.,	LS			-
	Inlet Works				
2.1.2	Inlet Chamber, Fine Screen Channel, Screen Effluent/ Grit Basin Distribution Channel, chambers, RCC Staircase, etc.,	LS			-
2.1.3	Vortex Grit Basins & chamber, Grit Basin effluent channel, Grit Classifier arrangement, chambers, RCC Staircase, etc.,	LS			-
2.1.4	Parshall Flume, drop chamber, connecting arrangement from Inlet works to Bioreactor, RCC Staircase etc.,	LS			-
	Bioreactor				
2.1.5	Bioreactor flow distribution channel, Anaerobic Zones, Anoxic Zones, Aerobic Zones, Aeration Basin Effluent Channel, MLR Feed, RAS inlet arrangement, Valve & flow meter chamber, Overflow & Bypass chamber, RCC Staircase, etc.,	LS			-
	Blower Building				
2.1.6	Process Air Blower Building, Valve chamber, Supports for air piping, RCC Stair case etc.,	LS			-
	Secondary Clarifiers				
2.1.7	Inlet arrangements from aeration basin outlet, Secondary Clarifier Distribution boxes, Secondary Clarifiers, Scum collection pit, Desluding valve chamber, RCC Staircase etc.,	LS			-
2.1.8	RAS pumping station including Valve & flow meter chambers, RCC Staircase, etc.,	LS			-
	Disc Filter				
2.1.9	Disc Filter Influent chamber, Disc Filter units and Disc Filter Effluent channel, Backwash water collection arrangement and disc filer building etc.,	LS			-
	Chlorine Contact Tank	LS			-
2.1.10	Chlorine Contact Tank, Inlet chamber, distribution chamber, Effluent Channel/pipe, flow meter chamber, RCC Staircase, Outfall Structure, etc.,	LS			-
2.1.11	Chlorine and Alum building etc and any other chemicals required as per the Process design, etc.,				
2.1.12	Treated water storage sump / Pump Station and inlet flow arrangement, chamber etc.	LS			-
	Odour Control Units				
2.1.13	Odour Control Units, Filter Beds, Valve chamber, Supports for air piping & Blowers, Supports and foundation for tanks, RCC Stair case etc.,	LS			-
	Sludge Dewatering				
2.1.14	Sludge Dewatering Building including sludge storage, chambers, RCC Stair case etc.,	LS			-

Name of the STP : 20 MLD STP at Koramangala					
Code 02: Providing and Execution of Civil Works and Other Site Facilities as defined for STP of 20 MLD capacity plant including TSPS at Koramangala.					
Item	**Description**	**Quantity**	**Price (INR)**	**GST (INR)**	**Total Price including GST (INR)**
(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6) = (4) + (5)**
2.1.15	Dewatering Feed sump and Pumping Station, chambers etc.,	LS			-
2.1.16	Scum Pit, Sump and Pump Station, Chamber etc.,	LS			-
2.1.17	Plant Drain Sump and Pump Station, Chamber etc.,	LS			-
2.1.18	Plant water Sump and Pump Station, Chamber etc.,	LS			-
	Substation For STP & TSPS				
2.1.19	Switch gear room, Electrical Sub station.	LS			-
2.1.20	Transformer yard.	LS			-
2.1.21	Plant D.G. Room.	LS			-
	Utility Buildings				
2.1.22	Administration Cum Laboratory Building & SCADA Building (Two Floors) (For SCADA control room, refer Particular ICA requirements).	LS			-
2.1.23	Guard Room (Security Room).	LS			-
2.1.24	Parking Shed as defined in Volume 2 and Volume 3 of the Bidding Document.	LS			-
	Other Utilities				
2.1.25	Name boards for all process and non process units and building in kannada / English.	LS			-
2.1.26	All demolish works as required and defined in Volume 2 & Volume 3 of the Bidding Document.	LS			-
2.1.27	Plant Internal Roads with drains and path ways along road side and between the connecting roads as defined in Volume 2 and Volume 3 of the Bidding Document.	LS			-
2.1.28	Approach Road to STP, TSPS.	LS			-
2.1.29	Ground improvement plan for site grading.	LS			-
2.1.30	Electric cable trenches inside the STP site.	LS			-
2.1.31	Plant Scale Model as defined in Volume 2 of the Bidding Document.	LS			-
2.1.32	Culverts and bridges as defined in Volume 2 and Volume 3 of the Bidding Document.	LS			-
2.1.33	Compound Wall / Retaining wall with gates as defined in Volume 2 and Volume 3 of the Bidding Document.	LS			-
2.1.34	RCC works for Nallah & flow diversion works as defined in Volume 2 and Volume 3 of the Bidding Document.	LS			-
2.1.35	Site retaining structure as defined in Volume 2 and Volume 3 of the Bidding Document.	LS			-
2.1.36	Pile foundation as defined in Volume 2 and Volume 3 of the Bidding Document.	LS			-
2.1.37	Additional Backfill for entire Project to meet the FGL specified in the Volume 2 and Volume 3 of the Bid Document.	LS			-
2.1.38	Complete Plant Landscaping.	LS			-
2.1.39	Tree Plantation.	LS			-
2.1.40	**The bidder shall list here details of any additional items (all area of the works) required for a complete installation.**				

Name of the STP : 20 MLD STP at Koramangala					
Code 02: Providing and Execution of Civil Works and Other Site Facilities as defined for STP of 20 MLD capacity plant including TSPS at Koramangala.					
Item	**Description**	**Quantity**	**Price (INR)**	**GST (INR)**	**Total Price including GST (INR)**
(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6) = (4) + (5)**
a		LS			-
b		LS			-
c		LS			-
d		LS			-
e		LS			-
Sub Total of 2.1			**-**	**-**	**-**
	Requirement of Office of the Engineer.				
2.2	**The following equipment, furniture and furnishings for each Proposed STP under the contract shall include:**				
	Office furniture shall be of only Godrej or Featherlite.				
2.2.1	Conference table 10'-0" x 5'-0" with 6 chairs - 1 Set complete.	Set			-
2.2.2	5' x 3' table with both side drawers (1 on each side) - 1 Set complete.	Set			-
2.2.3	4' x 2 ½' table with both side drawers (3 on each side) - 1 set complete.	Set			-
2.2.4	Executive Chairs (approved make) excluding chairs for Computer and Conference -1 Set complete.	Set			-
2.2.5	Steel cupboards (Storewel type or similar approved) - 2 Sets.	Set			-
2.2.6	Oscillating or wall mounted fan 400 mm dia - 3 Sets.	Set			-
2.2.7	Split AC for the Office Area - 1 set complete.	Set			-
2.2.8	Computer Table and Chair - 2 Sets.	Set			-
2.2.9	Personal Computer - with following Features, plus UPS: - 3.0 MHz processor, ATX cabinet, 256 KB external cache, 8GB RAM, 1 TB HDD, DVD Drive/RW, 32" LED flat panel colour monitor, 8USB 2.0 ports, with at least 2 of these in the front, Standard 101/102 keyboard, Optical Mouse and Mouse Pad (two sets), Pre-loaded with licensed Windows OS (Latest), Compressive Security and Management features such as antivirus, antispyware, and firewall, additional software - MS Office (latest version), AutoCAD latest version All the necessary consumables including paper, CDs, Printer cartridges etc.- 2 Set Complete.	Set			-
2.2.10	Telephone line with STD Facility and high speed broadband internet- 1 Set complete.	Set			-
2.2.11	Fire Extinguisher – CO2 type (3 Kg) with other accessories- 4 Sets complete.	Set			-

Name of the STP : 20 MLD STP at Koramangala					
Code 02: Providing and Execution of Civil Works and Other Site Facilities as defined for STP of 20 MLD capacity plant including TSPS at Koramangala.					
Item	**Description**	**Quantity**	**Price (INR)**	**GST (INR)**	**Total Price including GST (INR)**
(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6) = (4) + (5)**
2.2.12	Supply, Installation, testing and commissioning of Lighting System covering Lighting Distribution board, Switchboards, Switch sockets, Power Plug & Sockets, Luminaries, Ceiling Fans, Cables, Conduits, wires, earthing etc. for the Site Office complete as per Specification- 1 Set.	Job			-
2.2.13	**The bidder shall list here details of any additional items.**				
2.2.14		Set			-
2.2.15		Set			-
2.2.16		Set			-
2.2.17		Set			-
2.2.18		Set			-
Sub Total of 2.2			**-**	**-**	**-**
Total (Sub Total 2.1+Sub Total 2.2)			**-**	**-**	**-**

Name of the STP : 20 MLD STP at Koramangala						
Code 03: Supply and Installation of Mechanical Works and Other Site Facilities as defined for STP of 20 MLD capacity plant including TSPS at Koramangala.						
Item	**Description**	**Quantity**	**Ex. Works (INR)**	**GST (INR)**	**Local Transport (INR)**	**Total Price including GST (INR)**
(1)	**(2)**	**(3)**	**(4)**	**(5**	**(6)**	**(7) =(4) + (5) + (6)**
3.0	**Plant and Equipment**					
3.1	**Process Plant and Equipments as defined in the Bidding Document.**					
3.1.1	**TSPS**					
3.1.1.1	Inlet & Effluent chambers, Overflow chamber, Screen channels with necessary screening arrangements (Trash & Coarse screen), Conveyors, Screening collection arrangement, Sluice gates, weir gates and Inlet & Overflow piping with fittings and Hardware with piping and all allied works complete.	LS				-
3.1.1.2	Wet well with superstructure & Pumping system , Submersible pumps with suitable valves and piping arrangements and Hardware and all allied works complete.	LS				-
3.1.1.3	Material Handling system with suitable Cranes and hoist arrangements with Hardware and all allied works complete.	LS				-
3.1.1.4	Miscellaneous works such as flushing arrangements, dewatering, ventilation system and odour collection system including Hardware all allied works complete.	LS				-
3.1.2	**STP**					
3.1.2.1	Inlet chamber and Fine Screen Channel, Overflow chamber, Screen Effluent / Grit Basin Distribution Channel with Sluice gates, weir gates, Stop logs, Inlet & Overflow piping with fittings, flushing arrangement, including Hardware and all allied works complete.	LS				-
3.1.2.2	Screen chamber with effluent channel, drain piping and Fine screening, Conveyors, Screening collection arrangement, flushing arrangement, including Hardware and all allied works complete.	LS				-
3.1.2.3	Vortex Grit mechanism with grit classifier & washing mechanism, Conveyors, Grit collection arrangement, sluice gates, Stop logs, flushing arrangement, including Hardware and all allied works complete.	LS				-
3.1.2.4	Aeration Basin with diffused aeration arrangement with piping, Sluice gates and weir gates, Stop logs, flushing arrangement, including Hardware and all allied works complete.	LS				-
3.1.2.5	Anaerobic Zone Inlet arrangement including pipework, Submersible mixer arrangement and Material Handling Equipment, flushing arrangement, scum collection system, Hardware with piping and all allied works complete.	LS				-
3.1.2.6	Anoxic zone Inlet arrangement including pipework, Submersible mixer arrangement and Material Handling Equipment, flushing arrangement, scum collection system, Hardware with piping and all allied works complete.	LS				-
3.1.2.7	Deareation zone with MLR pump set, Inlet arrangement Inlet arrangement including pipework, Submersible mixer arrangement and Material Handling Equipment, flushing arrangement, Hardware with piping and all allied works complete.	LS				-
3.1.2.8	Aeration Zone with Fine Bubble Diffuser Aeration system arrangement, Pipe grid, Drop legs, piping arrangements, Drain pump sets, Electric hoist, sluice gates, flushing arrangement, scum collection system, Material Handling Equipment, piping and valves including Hardware and all allied works complete.	LS				-

Name of the STP : 20 MLD STP at Koramangala						
Code 03: Supply and Installation of Mechanical Works and Other Site Facilities as defined for STP of 20 MLD capacity plant including TSPS at Koramangala.						
Item	**Description**	**Quantity**	**Ex. Works (INR)**	**GST (INR)**	**Local Transport (INR)**	**Total Price including GST (INR)**
(1)	**(2)**	**(3)**	**(4)**	**(5**	**(6)**	**(7) =(4) + (5) + (6)**
3.1.2.9	Aeration Zone with Fixed Film Activated Sludge (IFAS) system arrangement, consist of bio-textile sheets made of polypropylene knitted curtains mounted on SS 316 cages with water-resistant Polypropylene (PP) clamps and fixing accessories and including periodic cleaning system, Electric hoist, flushing arrangement, Material Handling Equipment, Hardware and all allied works complete.	LS				-
3.1.2.10	Process Air Blower Building with blowers, Air Coolers, EOT Crane, Service water & blower cooling arrangement, Piping and valves, Material Handling Equipment, Ventilation system, Hardware and all allied works complete.	LS				-
3.1.2.11	Alum solution preparation and dosing which includes minimum of preparation and dosing pump sets to feed maximum average doses efficiently, agitators, mixing arrangement, flushing arrangement, Channel mounted mixer for alum mixing, Material Handling Equipment, Ventilation system, Hardware with piping and all allied works complete including bulk storage tank and containment structure in case of a spill.	LS				-
3.1.2.12	Inlet & outlet piping, Distribution Chamber for Secondary Clarifiers with Inlet & Outlet sluice gates, stop logs, weir arrangement, flushing arrangement, piping and valves including Hardware and all allied works complete.	LS				-
3.1.2.13	Inlet & Outlet piping, Secondary Clarifiers mechanism, Bridge, scum collection with desludging arrangements, Material Handling Equipment, flushing arrangement, piping and valves including Hardware and all allied works complete.	LS				-
3.1.2.14	Inlet & Outlet piping, Disc Filter Influent & Effluent chamber sluice gates, Weir gates, Stop logs, Disc Filter units with chemical cleaning arrangements. Backwash water system and collection arrangement etc and all allied works complete.	LS				-
3.1.2.15	Scum pumping station general arrangement, Pump sets, flushing arrangement, scum Handling Equipment, Ventilation system, Hardware with piping, Valves and all allied works complete.	LS				-
3.1.2.16	Chlorine & any other chemical dosing arrangement, spill containment bund, flushing arrangement, Material Handling Equipment, Ventilation system, Hardware with piping and all allied works complete.	LS				-
3.1.2.17	Inlet & Outlet piping, Chlorine Contact Tank & Outfall structure with sluice gates, weir gates, Stop logs, mixing arrangement, hardware with piping, valves and all allied works complete, Disk filters.	LS				-
3.1.2.18	Dewatering feed pumping system, Submersible mixer arrangement, Sludge feed Pump sets, flushing arrangement, Ventilation system, Material Handling Equipment and Hardware with piping, valves and all allied works complete.	LS				-
3.1.2.19	Polyelectrolyte dosing systems for sludge dewatering, stirrer arrangement, feeding arrangement, Preparation & Storage tanks, Dosing Pump sets, flushing arrangement, Material Handling Equipment, Ventilation system, Hardware with piping and all allied works complete.	LS				-
3.1.2.20	Sludge dewatering units, sludge cake screw conveying system with cut gate arrangement and hopper & Collection system, Material Handling Equipment for sludge dewatering units, flushing arrangement, Ventilation system, Hardware with piping and all allied works complete.	LS				-

Name of the STP : 20 MLD STP at Koramangala						
Code 03: Supply and Installation of Mechanical Works and Other Site Facilities as defined for STP of 20 MLD capacity plant including TSPS at Koramangala.						
Item	**Description**	**Quantity**	**Ex. Works (INR)**	**GST (INR)**	**Local Transport (INR)**	**Total Price including GST (INR)**
(1)	**(2)**	**(3)**	**(4)**	**(5**	**(6)**	**(7) =(4) + (5) + (6)**
3.1.2.21	Inlet & Outlet piping, Plant Drain Sump and Pump Station, Submersible pump sets, Material Handling Equipment,, Hardware with piping, Valves and all allied works complete.	LS				-
3.1.2.22	Inlet & Outlet piping, Treated water storage Pump Station, Submersible pump sets, Material Handling Equipment, Hardware with piping, Valves and all allied works complete.	LS				-
3.1.2.23	Inlet & Outlet piping, Plant water Pump Station, Submersible pump sets, Material Handling Equipment, Sluice gates, Weir gates, Stop log gates, Hardware with piping, Valves, All Plant Piping works and all allied works complete.	LS				-
3.1.2.24	Inlet & Outlet piping, Tanker filling station, Submersible pump sets, Material Handling Equipment, Hardware with piping, Valves and all allied works complete.	LS				-
3.1.2.25	Flushing arrangement for all chemical & Sludge Material Handling systems, Dewatering Pumps including piping and all allied works in all sludge & Chemical Material Handling pump houses complete.	LS				-
3.1.2.26	Potable water system including pumps with Hardware, piping, Valves and all allied works complete.	LS				-
3.1.2.27	Fire Fighting system for the whole plant (inclusive of fire alarm, fire detection, fire extinguishing system), Tools Kit, Air conditioning system for SCADA control room & Administration and Laboratory Building and all allied works complete.	LS				-
3.1.2.28	Air intake blowers with piping and valves, filters beds, Bio-filters, suction-filters, air duct work, mist eliminators, and dehumidifiers and all allied works complete for Odour Control Units.	LS				-
3.1.2.29	**The bidder shall list here details of any additional items (all areas of the works) required for a complete installation.**					
a		LS				-
b		LS				-
c		LS				-
d		LS				-
e		LS				-
Sub Total of 3.1			**-**	**-**	**-**	**-**
3.2	**General Mechanical Systems**					
3.2.1	Building Services including domestic water systems The bidder shall list here details of any additional items required for a complete installation.	LS				-
3.2.2		LS				-
3.2.3		LS				-
3.2.4		LS				-
3.2.5		LS				-
Sub Total of 3.2			**-**	**-**	**-**	**-**
Total (Sub Total 3.1+Sub Total 3.2)			**-**	**-**	**-**	**-**

Name of the STP : 20 MLD STP at Koramangala						
Code 03: Supply and Installation of Mechanical Works and Other Site Facilities as defined for STP of 20 MLD capacity plant including TSPS at Koramangala.						
Item	**Description**	**Quantity**	**Ex. Works (INR)**	**GST (INR)**	**Local Transport (INR)**	**Total Price including GST (INR)**
(1)	**(2)**	**(3)**	**(4)**	**(5**	**(6)**	**(7) =(4) + (5) + (6)**

Name of the STP : 20 MLD STP at Koramangala						
Code 04: Supply and Installation of Electrical Works and Other Site Facilities as defined for STP of 20 MLD capacity plant including TSPS at Koramangala.						
Item	**Description**	**Quantity**	**Ex. Works (INR)**	**GST (INR)**	**Local Transport (INR)**	**Total Price including GST (INR)**
(1)	**(2)**	**(3)**	**(4)**	**(5**	**(6)**	**(7) =(4) + (5) + (6)**
4.0	**Plant and Equipment**					
4.1	**Electrical works as defined in the Bidding Document.**					
4.1.1	**Supply of 11kV underground Cables, Termination Kits at following locations as per scope, specification and drawings.**					
4.1.1.1	11kV Outdoor cable termination at Tariff Metering Unit / BESCOM.	LS				-
4.1.1.2	11kV Indoor cable terminations at incomer and outgoings of 11kV Metal Enclosed Switchboard of Sewage Treatment Plant.	LS				-
4.1.1.3	11kV Outdoor cable terminations at primary side of 11kV / 0.433 kV Transformers of Sewage Treatment Plant.	LS				-
4.1.1.4	11kV XLPE Cable from Metering Unit to incomer of 11kV Metal Enclosed Switchboard of Sewage Treatment Plant.	LS				-
4.1.1.5	11kV XLPE Cables from 11kV Metal Enclosed Switchboard to Primary cable end boxes of 11kV/0.433kV Transformers of Sewage Treatment Plant.	LS				-
4.1.1.6	11kV XLPE Cable from existing Metering Unit to Proposed 11kV Metal Enclosed Switchboard if applicable.	LS				-
4.1.1.7	11kV XLPE Cable from Proposed 11kV Metal Enclosed Switchboard to 11kV Metal Enclosed Switchboard at Existing Sewage Treatment Plant if applicable.	LS				-
4.1.1.8	11kV Cable Straight through joints.	LS				-
4.1.2	**Supply of Electrical equipments at Sewage Treatment Plant Substation Building & Process Air Blower Building as per scope, specification and drawings.**					
4.1.2.1	11kV Metal Enclosed Switchboard.	LS				-
4.1.2.2	Diesel Generator Set complete with AMF Control Panel.	LS				-
4.1.2.3	11kV / 0.433kV Transformers.	LS				-
4.1.2.4	LT Non Segregated Aluminium Bus ducts with necessary supporting structure.	LS				-
4.1.2.5	415V Switchgear PCC.	LS				-
4.1.2.6	415V DG PCC.	LS				-
4.1.2.7	415V Capacitor banks with Automatic Power Factor Correction Relay.	LS				-
4.1.2.8	110V D.C Battery Bank, Battery Charger with D.C Distribution Board.	LS				-
4.1.3	**Supply of Motor Control Centers , Distribution boards etc of Motor Control Centres, Distribution boards etc at various locations in TSPS & Sewage Treatment plant with following major equipment, items as per scope, specification and drawings.**					
4.1.3.1	TSPS MCC.	LS				-
4.1.3.2	Process Air Blower MCC.	LS				-
4.1.3.3	Headwork's MCC.	LS				-
4.1.3.4	Centrifuge MCC.	LS				-
4.1.3.5	RAS MCC.	LS				-
4.1.3.6	Chlorine MCC.	LS				-
4.1.3.7	Main Lighting DB.	LS				-
4.1.3.8	Variable Frequency Drives MCC, Active Harmonic Filters (AHF)	LS				-
4.1.3.9	Local Push Button Stations.	LS				-

Name of the STP : 20 MLD STP at Koramangala						
Code 04: Supply and Installation of Electrical Works and Other Site Facilities as defined for STP of 20 MLD capacity plant including TSPS at Koramangala.						
Item	**Description**	**Quantity**	**Ex. Works (INR)**	**GST (INR)**	**Local Transport (INR)**	**Total Price including GST (INR)**
(1)	**(2)**	**(3)**	**(4)**	**(5**	**(6)**	**(7) =(4) + (5) + (6)**
4.1.3.10	Miscellaneous works-Distribution Board (Valve DB, Fan DB, Power DB, Auxiliary DB etc.)	LS				-
4.1.4	**Supply of Lighting System at TSPS & Sewage Treatment Plant with following major equipment, items as per scope, specification and drawings.**					
4.1.4.1	Lighting Fixtures.	LS				-
4.1.4.2	Lighting panels.	LS				-
4.1.4.3	Switchboards, Receptacles, Power Plug & Sockets, Switches, Ceiling fans with regulators etc.,	LS				-
4.1.4.4	Point wiring with conduits, wires, supports etc for Lighting fixtures, Receptacles, Ceiling fans etc	LS				-
4.1.4.5	Street Lighting and Area Lighting poles with Junction boxes and Over hang.	LS				-
4.1.4.6	Solar PV System for Street Lighting.	LS				-
4.1.5	**Supply of L.T Cabling System, HT/LT Cable Carrier System of L.T Cabling System, HT/LT Cable Carrier System at TSPS & Sewage Treatment Plant with following major components as per scope, specification and drawings.**					
4.1.5.1	L.T cables.	LS				-
4.1.5.2	L.T Cable termination with glands and lugs.	LS				-
4.1.5.3	Cable trays on supports for both LT and HT Cables.	LS				-
4.1.5.4	Hume Pipe.	LS				-
4.1.6	**Supply of Earthing & Lightning Protection System of Earthing & Lightning Protection System at TSPS & Sewage Treatment Plant with following major components as per scope, specification and drawings.**					
4.1.6.1	Earthing Conductor for outdoor main grid.	LS				-
4.1.6.2	Earthing Conductor for indoor main grid.	LS				-
4.1.6.3	Earthing Conductors for outdoor equipments and Junction Boxes.	LS				-
4.1.6.4	Lightning Protection system with Arrestors, Down Conductors, Test Links, and Counters.	LS				-
4.1.6.5	Earthing Conductor for indoor equipments.	LS				-
4.1.6.6	Treated Earth pits.	LS				-
4.1.6.7	Lightning System Earth pits.	LS				-
4.1.7	**Complete Installation, testing and commissioning of safety procedures with Signage for Electrical Equipments at TSPS & Sewage Treatment Plant as per scope, specification and drawings.**	LS				-
4.1.8	**The bidder shall list here details of any additional items required for a complete installation.**					
4.1.8.1		LS				-
4.1.8.2		LS				-
4.1.8.3		LS				-
4.1.8.4		LS				-
4.1.8.5		LS				-
Sub Total of 4.1			**-**	**-**	**-**	**-**
Total (Sub Total 4.1)			**-**	**-**	**-**	**-**

Name of the STP : 20 MLD STP at Koramangala						
Code 04: Supply and Installation of Electrical Works and Other Site Facilities as defined for STP of 20 MLD capacity plant including TSPS at Koramangala.						
Item	**Description**	**Quantity**	**Ex. Works (INR)**	**GST (INR)**	**Local Transport (INR)**	**Total Price including GST (INR)**
(1)	**(2)**	**(3)**	**(4)**	**(5**	**(6)**	**(7) =(4) + (5) + (6)**

Name of the STP : 20 MLD STP at Koramangala						
Code 05: Supply and Installation of Instrumentation, Control & Automation Works including Laboratory Equipments as defined for STP of 20 MLD capacity plant including TSPS at Koramangala.						
Item	**Description**	**Quantity**	**Ex. Works (INR)**	**GST (INR)**	**Local Transport (INR)**	**Total Price including GST (INR)**
(1)	**(2)**	**(3)**	**(4)**	**(5**	**(6)**	**(7) =(4) + (5) + (6)**
5.0	**Plant and Equipment**					
5.1	**Instrumentation, Control & Automation works as defined in the Bidding Document.**					
5.1.1	**Supply of the following Instrumentation Systems as per Technical Specifications.**					
5.1.1.1	Supplying of Electromagnetic Flow meter's with Indicating Transmitter's with totalizer (full bore type) with flange Ends, rates shall be inclusive of mating flanges with necessary fasteners and gaskets, for the complete STP. The flow meter shall be Interfaced with PLC based SCADA control system with minimum I/O Requirements for Auto mode Control operation of the Plant as defined in Volume 2. Following are the minimum locations where Electromagnetic Flow meter shall be provided:					
a	Common discharge line from raw sewage pumps. (TSPS Pumps)	LS				-
b	Overflow / bypass line from TSPS to final outfall structure.	LS				-
c	Bypass line before the Parshall flume to final outfall structure.	LS				-
d	RAS flow measurement from each secondary clarifier (on Suction Side of RAS pump).	LS				-
e	RAS flow measurement on common discharge line.	LS				-
f	RAS flow measurement to each anaerobic zone.	LS				-
g	RAS flow measurement to each anoxic zone.	LS				-
h	Tapping of WAS flow from common RAS discharge line with its flow measurement.	LS				-
i	Final effluent flow measurement at outlet of CCT.	LS				-
j	Common discharge line from Alum dosing pumps.	LS				-
k	Common discharge line from plant drain pumps.	LS				-
l	Delivery side of each centrifuge feed pump.	LS				-
m	Delivery side of each poly dosing pump.	LS				-
n	Common discharge line from plant water pumps.	LS				-
o	Common discharge line from Treated water pumps.	LS				-
p	Common discharge line from Scum Transfer Pumps.	LS				-
5.1.1.2	Supplying of Radar type open channel flow measurement (Parshall Flume) with Transmitter's along with required accessories and fittings for open channel flow measurement for the complete STP. The flow meter shall be Interfaced with PLC based SCADA control system. Following are the minimum locations where open channel flow measurement (Parshall Flume) shall be provided:					
a	Common flow measurement after vortex grit chamber.	LS				-
b	MLR flow measurement to each anoxic zone.	LS				-
c	Common Disc filters bypass flow measurement.	LS				-
5.1.1.3	Supplying of Air Flow Measuring System (Thermal mass flow meter) along with the required accessories & fittings for the complete STP. and Interfacing with PLC based SCADA control system with minimum I/O Requirements for Auto mode Control operation of the Plant as defined in Volume 2. Following are the minimum locations where Air Flow Measuring System (Thermal mass flow meter) shall be provided:					
a	Process air flow measurement to each Aeration Basins.	LS				-

Name of the STP : 20 MLD STP at Koramangala						
Code 05: Supply and Installation of Instrumentation, Control & Automation Works including Laboratory Equipments as defined for STP of 20 MLD capacity plant including TSPS at Koramangala.						
Item	**Description**	**Quantity**	**Ex. Works (INR)**	**GST (INR)**	**Local Transport (INR)**	**Total Price including GST (INR)**
(1)	**(2)**	**(3)**	**(4)**	**(5**	**(6)**	**(7) =(4) + (5) + (6)**
5.1.1.4	Supplying of Radar Type Level Transmitter's with indicators & alarms as required including all required Mounting accessories for the complete STP. and Interfacing with PLC based SCADA control system with minimum I/O Requirements for Auto mode Control operation of the Plant as defined in Volume 2. Following are the minimum locations where Radar type Differential Level Transmitter's shall be provided:					
a	Each Compartment of Wet Well (LIT-R).	LS				-
b	Each Sludge Storage Tank (LIT-R).	LS				-
c	Each Plant Drain Sump (LIT-R).	LS				-
d	Each Plant Water Sump (LIT-R).	LS				-
e	Each Scum Pit (LIT-R).	LS				-
f	Each Alum Dosing Tank (LIT-R).	LS				-
g	Each Auto-polymer Tank (LIT-R).	LS				-
5.1.1.5	Supplying of Radar Type Differential Level Transmitter's with indicators & alarms as required including all required Mounting accessories for the complete STP. and Interfacing with PLC based SCADA control system with minimum I/O Requirements for Auto mode Control operation of the Plant as defined in Volume 2. Following are the minimum locations where Radar type Differential Level Transmitter's shall be provided:					
a	Each Coarse Screen Channel (DLIT-R).	LS				-
b	Each Fine Screen Channel (DLIT-R).	LS				-
c	Each de-aeration Zone (LIT-R).	LS				-
5.1.1.6	Supplying of Sludge Blanket Level Transmitter's with indicators & alarms as required including all required Mounting accessories for the complete STP. and Interfacing with PLC based SCADA control system with minimum I/O Requirements for Auto mode Control operation of the Plant as defined in Volume 2. Following are the minimum locations where Sludge Blanket Level Transmitter's shall be provided:					
a	Each Secondary Clarifier	LS				-
5.1.1.7	Supplying of Conductivity type Level Switches, High & High Level and Low & Low Level sensing with 4 point contact, including all necessary instrumentation cabling, glands with suitable stub and flange and bolting arrangement for hook-up, for the complete STP and also Interfacing with PLC based scada control system with minimum I/O Requirements for Auto mode Control operation of the Plant as defined in Volume 2. Following are the minimum locations where Conductivity type Level Switches shall be provided:					
a	Each Wet Well 4-Point (LS).	LS				-
b	Each Sludge Storage Tank 4-Point (LS).	LS				-
c	Each Plant Drain Sump 4-Point (LS).	LS				-
d	Each Plant Water Sump 4-Point (LS).	LS				-
e	Each Scum Pit 4-Point (LS).	LS				-
f	Each Alum Dosing Tank 3-Point (LS).	LS				-
g	Each Auto-polymer Tank 3-Point (LS).	LS				-
h	Each Over Head Tank 2-Point (LS).	LS				-

Name of the STP : 20 MLD STP at Koramangala						
Code 05: Supply and Installation of Instrumentation, Control & Automation Works including Laboratory Equipments as defined for STP of 20 MLD capacity plant including TSPS at Koramangala.						
Item	**Description**	**Quantity**	**Ex. Works (INR)**	**GST (INR)**	**Local Transport (INR)**	**Total Price including GST (INR)**
(1)	**(2)**	**(3)**	**(4)**	**(5**	**(6)**	**(7) =(4) + (5) + (6)**
5.1.1.8	Supplying of Pressure Indicating Transmitter's with necessary instrumentation cabling, manifold, glands and conduit with suitable stub and flange and bolting arrangement for hook-up, for the complete STP. Also Interfacing with PLC based SCADA control system with minimum I/O Requirements for Auto mode Control operation of the Plant as defined in Volume 2. Following are the minimum locations where Pressure Indicating Transmitter's shall be provided:					
a	TSPS Common Discharge Line (PIT).	LS				-
b	Individual Air Line to Each Aeration Basin (PIT).	LS				-
c	Common RAS Pump Discharge Line (PIT).	LS				-
d	Individual Centrifuge feed pump Line (PIT).	LS				-
e	Common Scum Line (PIT).	LS				-
f	Common Plant Drain Line (PIT).	LS				-
g	Common Plant Water Line (PIT).	LS				-
h	Common Treated Water Line (PIT).	LS				-
i	Odour Control Units (PIT-Differential)	LS				-
5.1.1.9	Supplying of Temperature Indicating Transmitter's with necessary instrumentation cabling, manifold, glands and conduit with suitable stub and flange and bolting arrangement for hook-up, for the complete STP. Also Interfacing with PLC based SCADA control system with minimum I/O Requirements for Auto mode Control operation of the Plant as defined in Volume 2. Following are the minimum locations where Temperature Indicating Transmitter's shall be provided:					
a	TSPS Common Discharge Line (TIT)	LS				-
b	Each Air Blower Discharge Lines (TIT)	LS				-
5.1.1.10	Supplying of Pressure Switches on all the individual pumps and individual blowers (Refer Part 11 for list of pumps and blowers) with necessary instrumentation cabling, glands and conduit with suitable stub and flange and bolting arrangement for hook-up, Pressure switch and also Interfacing with PLC based SCADA control system with minimum I/O Requirements for Auto mode Control operation of the Plant as defined in Volume 2.	LS				-
5.1.1.11	Supplying of Flow Switches on all the individual pumps (Refer Part 11 for list of pumps) with necessary instrumentation cabling, glands and conduit with suitable stub and flange and bolting arrangement for hook-up, Flow switch and also Interfacing with PLC based SCADA control system with minimum I/O Requirements for Auto mode Control operation of the Plant as defined in Volume 2.	LS				-
5.1.1.12	Supplying of Float type Level Gauges on all types of chemical tanks (Refer Part 11 for list of chemical tanks) with necessary length of tubing suitable for mounting , including isolating valve for maintenance etc., complete with all lead and lifts etc, for the Plant as defined in Volume 2.	LS				-
5.1.1.13	Supplying of glycerine filled stainless steel pressure gauges of 150 mm Dia. Dial suitable on top of Air vessel with nipple, snubber for vibration resistance and necessary length of SS tubing suitable for mounting , including three isolating valve for maintenance etc., complete with all lead and lifts etc, for the mounting on individual discharge line and common discharge lines of all types of pumps and blowers as defined in Volume 2 (Refer Part 11 for list of pumps and blowers).	LS				-

Name of the STP : 20 MLD STP at Koramangala						
Code 05: Supply and Installation of Instrumentation, Control & Automation Works including Laboratory Equipments as defined for STP of 20 MLD capacity plant including TSPS at Koramangala.						
Item	**Description**	**Quantity**	**Ex. Works (INR)**	**GST (INR)**	**Local Transport (INR)**	**Total Price including GST (INR)**
(1)	**(2)**	**(3)**	**(4)**	**(5**	**(6)**	**(7) =(4) + (5) + (6)**
5.1.1.14	Supplying of Field instruments IP-65 enclosures for complete field instrumentation.	LS				-
5.1.1.15	Supplying of Field Junction boxes.	LS				-
5.1.1.16	Supplying of Surge protection Devices for all the instruments.	LS				-
5.1.1.17	Supply of dedicated online UPS systems at (1) Control room of PLC SCADA system, (2) Admin Building, (3) individual RIO panels, (4) CCTV system including fire alarm control panel of the STP. Each UPS shall independently provide power backup for all the connected equipment, ensuring 120 minutes of backup on full load at each location.	LS				-
5.1.1.18	Supplying of Air conditioning system for control room with all accessories complete as required under specifications.	LS				-
5.1.1.19	Instrumentation Earthing system for complete STP.	LS				-
5.1.1.20	Supplying of Weight Indicator cum Transmitter with required accessories & fittings.	LS				-
5.1.1.21	**The bidder shall list here details of any additional items required for a complete installation.**					
a		LS				-
b		LS				-
c		LS				-
d		LS				-
e		LS				-
5.1.2	**Supply of Online Analytical Instruments as per Technical Specifications defined in Volume 2.**					
5.1.2.1	Dissolved Oxygen Analyzer + Accessories + fittings.	LS				-
5.1.2.2	ORP Analyzer's+ Accessories + fittings.	LS				-
5.1.2.3	pH Analyzer+ Accessories + fittings.	LS				-
5.1.2.4	Temperature Analyzer-+ Accessories+ Fittings.	LS				-
5.1.2.5	MLSS Analyzer-+ Accessories+ Fittings.	LS				-
5.1.2.6	Turbidity Analyzer-+ Accessories+ Fittings.	LS				-
5.1.2.7	Residual Chlorine Analyzer+ Accessories +fittings.	LS				-
5.1.2.8	Conductivity Analzyer+ Accessories + fittings.	LS				-
5.1.3	**Supply of Online Real Time Multi Parameters Continuous Monitoring System for Influent and Treated Sewage Parameters & Auto Samplers.**					
5.1.3.1	All weather refrigerated Auto sampler's as per specifications.	LS				-
5.1.3.2	Real time Multi Parameters Continuous Monitoring System for Influent and Treated Sewage Parameters at Inlet & outlet of STP to measure the following parameters (BOD, COD, TSS, TDS, COLOR, pH, TKN, TN, Ammonical Nitrogen, TP, Dissolved Oxygen & Temperature) and communication modules to transmit the data to SCADA system, and KSPCB data centers as required.	LS				-
5.1.4	**Supply of the Instrumentation Cables/cable trays as per Technical Specification.**					
5.1.4.1	Supplying of Instrumentation & Control Cables and Power Cables, OFC, Glands & Lugs, cable conduits, etc., as required to complete the entire Instrumentation, control and automation system, required as per specifications.	LS				-

Name of the STP : 20 MLD STP at Koramangala						
Code 05: Supply and Installation of Instrumentation, Control & Automation Works including Laboratory Equipments as defined for STP of 20 MLD capacity plant including TSPS at Koramangala.						
Item	**Description**	**Quantity**	**Ex. Works (INR)**	**GST (INR)**	**Local Transport (INR)**	**Total Price including GST (INR)**
(1)	**(2)**	**(3)**	**(4)**	**(5**	**(6)**	**(7) =(4) + (5) + (6)**
5.1.4.2	Supplying and installation of hot dip GI perforated cable tray's with cover along with required angle supports, with coupler plates, Anchor bolts and nuts etc complete and the tray should be fitted on the wall / ceiling etc. complete for all instrumentation cables.	LS				-
5.1.5	Any other item & accessories not specified above but required to complete the work as per bid specifications. Note: 1. Contractor shall list down all equipment with breakup of item, quantity and include the total price of these items. 2. Items not listed and required for completing the job shall be done by contractor without any additional payment.					
a		LS				-
b		LS				-
c		LS				-
d		LS				-
e		LS				-
5.1.6	**Control & Automation System**					
5.1.6.1	Supplying of redundant PLC (Hot standby PLC system), I/O Modules (critical inputs shall be on redundant I/O's), redundant managed ethernet switches, RIO 's with 16"color touch screen HMI, Redundant power supply, Spares as indicated in the specifications,etc..with all required accessories, required hardware & software complete with licensing, any other hardware & software to meet the requirements as per specifications.	LS				-
5.1.6.2	Supplying of PLC &16" HMI programming software for all PLC and HMI equipment.	LS				-
5.1.6.3	Supplying of redundant SCADA server software (SCADA is on dual redundant server) and historian software.	LS				-
5.1.6.4	Supplying of SCADA Server stations with 32" LED monitor system, loaded with latest authorised windows server operating system compatible with automation software, latest MS Office professional, licensed latest & proven PLC programming software, licensed SCADA software, centralized server monitored Anti virus software, required licensed network monitoring software, licensed firewall software, etc., with all accessories complete to meet the requirements as per specifications.	LS				-
5.1.6.5	Supplying of SCADA operator stations, engineering stations, Historian Stations & CCTV stations with 32" LED monitor systems, loaded with latest authorised windows operating system compatible with automation software, latest MS Office professional, licensed SCADA software, licensed client Anti virus software, required licensed network monitoring software, etc., all accessories complete to meet the requirements as per specifications.	LS				-
5.1.6.6	Supplying of multifunction Color Printers-A3 size servers with all accessories complete and networked with SCADA system.	LS				-
5.1.6.7	Supplying of 3 No's Industrial Laptop 16" screen loaded with authorised windows operating system, MS Office and PLC & HMI programming software, SCADA software with all accessories complete.	LS				-

Name of the STP : 20 MLD STP at Koramangala						
Code 05: Supply and Installation of Instrumentation, Control & Automation Works including Laboratory Equipments as defined for STP of 20 MLD capacity plant including TSPS at Koramangala.						
Item	**Description**	**Quantity**	**Ex. Works (INR)**	**GST (INR)**	**Local Transport (INR)**	**Total Price including GST (INR)**
(1)	**(2)**	**(3)**	**(4)**	**(5**	**(6)**	**(7) =(4) + (5) + (6)**
5.1.6.8	Supplying of SCADA System industrial consoles for housing the complete SCADA system with all accessories complete as per specifications.	LS				-
5.1.6.9	Supplying of LED screens, 55" in array of 2x3 (total 6 monitors) networked with SCADA & CCTV servers to display the SCADA screens, CCTV feeds, with all accessories complete in real time.	LS				-
5.1.6.10	Supplying of Pole / Wall Mounted, outdoor LED display screen of size (55”each in a 2x3 display array) networked with SCADA servers to be placed near the main entrance gate to digitally display all the real-time parameters of the STP and any other information as appropriate and as directed by Engineer, with all accessories complete in real time.	LS				-
5.1.6.11	Supply of wall mounted digital display touch screen of size 15 inches to digitally display real time temperature and noise level of all the process and non process buildings with networked with SCADA for remote monitoring/display on real time with all required sensors, accessories and fittings complete.	LS				-
5.1.7	**Communication Interface Equipment**					
5.1.7.1	Interoperability test in co-ordination with existing CP-024 & MIS-2 SCADA system @ Shimsha Bhavan to achieve complete data integration between this contracts and centralized SCADA centers to meet the requirements as per specifications.	LS				-
5.1.7.2	Supplying of redundant GPRS Communication modules with redundant SIM cards, redundant power supply units with all required accessories to communicate & receive all data from TSPS & STP of this contract, to existing CP-024 & MIS-2 SCADA system @ Shimsha Bhavan for bulk data transfer for monitoring and control.	LS				-
5.1.8	**Plant Monitoring and Management Requirements**					
5.1.8.1	Supplying of CCTV IR water proof cameras suitable for upto 100ft. with IR Dome camera, 360 degrees view, control key board, DVR, Hard Disk, cables, UPT transreceivers, complete with all required accessories, software and hardware required, CCTV server station loaded with CCTV software with latest windows OS with minimum 2 TB hard drive, licensed anti virus etc,.. with 32"LED monitors connected via LAN to SCADA servers, mounting poles, fixtures,etc.. (Close Circuit Television System to be installed to cover all areas of the facilities, inclusive of high speed internet bandwidth as required to monitor the CCTV feed remotely and via web based browsers. CCTV feeds shall be monitored from SCADA control room).	LS				-
5.1.8.2	Implementation of Plant Asset Management System (PAMS) Software, and its interface with STP PLC based SCADA system and Mobile app to streamline and enhance the tracking, maintenance, and management of all assets within the STP as defined in Volume 2.	LS				-
5.1.9	**The Bidder shall list here details of any additional items required for a complete works.** Note: 1. Contractor shall list down all equipment with breakup of item, quantity and include the total price of these items. 2. Items not listed and required for completing the job shall be done by contractor without any additional payment.					

Name of the STP : 20 MLD STP at Koramangala						
Code 05: Supply and Installation of Instrumentation, Control & Automation Works including Laboratory Equipments as defined for STP of 20 MLD capacity plant including TSPS at Koramangala.						
Item	**Description**	**Quantity**	**Ex. Works (INR)**	**GST (INR)**	**Local Transport (INR)**	**Total Price including GST (INR)**
(1)	**(2)**	**(3)**	**(4)**	**(5**	**(6)**	**(7) =(4) + (5) + (6)**
5.1.9.1		LS				-
5.1.9.2		LS				-
5.1.9.3		LS				-
5.1.9.4		LS				-
5.1.9.5		LS				-
Sub Total of 3.3			**-**	**-**	**-**	**-**
5.2	**Laboratory Equipments.**					
5.2.1	**Laboratory Equipments under the contract shall include:**					
5.2.1.1	Comparator test set for residual chlorine or chloroscope (1 No)	No				-
5.2.1.2	Multi Parameter (pH and Conductivity Meter) (1 No)	No				-
5.2.1.3	Mains operated pH meter completed with one calomel electrode and glass electrode (1 No)	No				-
5.2.1.4	Turbidimeter - Bench Model (Nephelometric Type) (1 No)	No				-
5.2.1.5	Turbidimeter - Hand held (Portable) (1 No)	No				-
5.2.1.6	Spectrophotometer (1 No)	No				-
5.2.1.7	Water bath with 6 to 8 concentric holes and discs, electrically heated (1 No)	No				-
5.2.1.8	Soxhlet extraction unit (1 No)	No				-
5.2.1.9	Kjeldahl digestion unit (1 No)	No				-
5.2.1.10	Hot plates (10 No's)	No				-
5.2.1.11	Distilled water plant (1 No)	No				-
5.2.1.12	Demineraliser (1 No)	No				-
5.2.1.13	Refrigerator (320 litres capacity) double door (1 No)	No				-
5.2.1.14	B.O.D. incubator (1 No)	No				-
5.2.1.15	BTNO (1 No)	No				-
5.2.1.16	Electric oven (1 No)	No				-
5.2.1.17	Magnetic stirrer (1 No)	No				-
5.2.1.18	Monopan balance with digital display (1 No)	No				-
5.2.1.19	Jar-Test apparatus with RPM controller and simultaneous addition of Chemicals in all jars (1 No)	No				-
5.2.1.20	Centrifuge (1 No)	No				-
5.2.1.21	Gas cylinder if gas supply is not available (1 No)	No				-
5.2.1.22	Fume cupboard/hood (2 No's)	Lot				-
5.2.1.23	Field Test kit for cations and anions (2 No's)	Lot				-
5.2.1.24	Depth sampler (2 No's)	Lot				-
5.2.1.25	Online Total organic carbon analytical analyser with online feedback to LIMS and SCADA system (1 No)	No				-
5.2.1.26	Sieve shaker with standard sieves and Two pan balance, weighing up to 200gm samples (1 No)	No				-
5.2.1.27	Weighing Balance (Max. 10 kg) (1 No)	No				-
5.2.1.28	Durham tubes and Imhoff cones (1 lot)	Lot				-
5.2.1.29	D.O meter (1 No)	No				-
5.2.1.30	Specified Gravity meter (1 No)	No				-

Name of the STP : 20 MLD STP at Koramangala						
Code 05: Supply and Installation of Instrumentation, Control & Automation Works including Laboratory Equipments as defined for STP of 20 MLD capacity plant including TSPS at Koramangala.						
Item	**Description**	**Quantity**	**Ex. Works (INR)**	**GST (INR)**	**Local Transport (INR)**	**Total Price including GST (INR)**
(1)	**(2)**	**(3)**	**(4)**	**(5**	**(6)**	**(7) =(4) + (5) + (6)**
5.2.1.31	Consumables -disposable & Re usable type	Lot				-
5.2.2	**Equipment Needed For Bacteriological Examination**					
5.2.2.1	Hot Air Oven (1 No)	No				-
5.2.2.2	Autoclave (1 No)	No				-
5.2.2.3	Incubator 37°C or 44°C (Water/Air-Jacketed) (1 No)	No				-
5.2.2.4	Binocular microscope (1 No)	No				-
5.2.2.5	Digital pH Meter (1 No)	No				-
5.2.2.6	Pipette Box (Stainless Steel - 10 No's)	Lot				-
5.2.2.7	Wooden Racks/Aluminium Racks (5 No's)	Lot				-
5.2.2.8	Wire Baskets (10 No's)	Lot				-
5.2.2.9	Cotton/ Aluminium Foils (10 No's)	Lot				-
5.2.2.10	Burners (Bunsen) With Pilot Lamp (3 No's)	Lot				-
5.2.2.11	Suction Flask (1 Litre Cap - 2 No's)	Lot				-
5.2.2.12	Suction Pump (2 No's)	Lot				-
5.2.2.13	Sampling Bottles (10 No's)	Lot				-
5.2.2.14	Measuring Cylinders (1000 Ml, 500 Ml, 200 Ml, 100 Ml, 50 Ml, 25 Ml) - Each 3 No's	Lot				-
5.2.2.15	Vacume pump (2 No's)	Lot				-
5.2.3	**Bacteriological Media**					
5.2.3.1	M. Endo Broth (dehydrated) (1 No)	No				-
5.2.3.2	Lactose or Lauryl Tryptose broth (1 No)	No				-
5.2.3.3	Mac Conkey broth (1 No)	No				-
5.2.3.4	Brilliant Green Bile Lactose Broth (1 No)	No				-
5.2.3.5	Total Plate Count Agar (1 No)	No				-
5.2.3.6	Peptone/Triyptone Water (1 No)	No				-
5.2.3.7	Laminar Air Flow Chamber (1 No)	No				-
5.2.4	**Laboratory Information Management System (LIMS)**					
5.2.4.1	Laboratory Information Management System (LIMS) software with Sample Management, Workflow Automation, and Data Management. Optional modules for Electronic Lab Notebook, Instrument Integration, and Inventory Management, with modular expansion based on laboratory needs with Interfacing with PLC based SCADA system and with various laboratory instruments of the plant as defined in Volume 2.	Job				-
5.2.5	**The bidder shall list here any additional laboratory Equipment Required.**					
5.2.5.1		No				-
5.2.5.2		No				-
5.2.5.3		No				-
5.2.5.4		No				-
5.2.5.5		No				-
Sub Total of 5.2			**-**	**-**	**-**	**-**

Name of the STP : 20 MLD STP at Koramangala						
Code 05: Supply and Installation of Instrumentation, Control & Automation Works including Laboratory Equipments as defined for STP of 20 MLD capacity plant including TSPS at Koramangala.						
Item	Description	Quantity	Ex. Works (INR)	GST (INR)	Local Transport (INR)	Total Price including GST (INR)
(1)	(2)	(3)	(4)	(5	(6)	(7) =(4) + (5) + (6)
Total (Sub Total 3.1+Sub Total 3.2)			-	-	-	-

Name of the STP : 20 MLD STP at Koramangala					
Code 06: Commissioning of Mechanical, Electrical and Instrumentation, Control & Automation Works for entire STP plant process including FAT & SAT of 20 MLD capacity plant including TSPS at Koramangala.					
Item	**Description**	**Quantity**	**Price (INR)**	**GST (INR)**	**Total Price including GST (INR)**
(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6) = (4) + (5)**
6.0	**Installations, Testing & Commissioning and Other Services.**				
6.1	**Complete Installation, testing and commissioning of Mechanical system as defined in the Bidding Document**				
	TSPS				
6.1.1	Inlet & Effluent chambers, Overflow chamber, Screen channels with necessary screening arrangements (Trash & Coarse screen), Conveyors, Screening collection arrangement, Sluice gates, weir gates and Inlet & Overflow piping with fittings and Hardware with piping and all allied works complete	LS			-
6.1.2	Wet well with superstructure & Pumping system, Submersible pumps with suitable valves and piping arrangements and Hardware and all allied works complete	LS			-
6.1.3	Material Handling system with suitable Cranes and hoist arrangements with Hardware and all allied works complete	LS			-
6.1.4	Miscellaneous works such as flushing arrangements, dewatering, ventilation system and odour collection system including Hardware all allied works complete	LS			-
	STP				
6.1.5	Inlet chamber and Fine Screen Channel, Overflow chamber, Screen Effluent / Grit Basin Distribution Channel with Sluice gates, weir gates, Stop logs, Inlet & Overflow piping with fittings, flushing arrangement, including Hardware and all allied works complete.	LS			-
6.1.6	Screen chamber with effluent channel, drain piping and Fine screening, Conveyors, Screening collection arrangement, flushing arrangement, including Hardware and all allied works complete.	LS			-
6.1.7	Vortex Grit mechanism with grit classifier & washing mechanism, Conveyors, Grit collection arrangement, sluice gates, Stop logs, flushing arrangement, including Hardware and all allied works complete.	LS			-
6.1.8	Aeration Basin with diffused aeration arrangement with piping, Sluice gates and weir gates, Stop logs, flushing arrangement, including Hardware and all allied works complete.	LS			-
6.1.9	Anaerobic Zone Inlet arrangement including pipework, Submersible mixer arrangement and Material Handling Equipment, flushing arrangement, scum collection system, Hardware with piping and all allied works complete.	LS			-
6.1.10	Anoxic zone Inlet arrangement including pipework, Submersible mixer arrangement and Material Handling Equipment, flushing arrangement, scum collection system, Hardware with piping and all allied works complete.	LS			-
6.1.11	Deareation zone with MLR pump set, Inlet arrangement including pipework, Submersible mixer arrangement and Material Handling Equipment, flushing arrangement, Hardware with piping and all allied works complete.	LS			-

Name of the STP : 20 MLD STP at Koramangala					
Code 06: Commissioning of Mechanical, Electrical and Instrumentation, Control & Automation Works for entire STP plant process including FAT & SAT of 20 MLD capacity plant including TSPS at Koramangala.					
Item	**Description**	**Quantity**	**Price (INR)**	**GST (INR)**	**Total Price including GST (INR)**
(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6) = (4) + (5)**
6.1.12	Aeration Zone with Fine Bubble Diffuser Aeration system arrangement, Pipe grid, Drop legs, piping arrangements, Drain pump sets, Electric hoist, sluice gates, flushing arrangement, scum collection system, Material Handling Equipment, piping and valves including Hardware and all allied works complete.	LS			-
6.1.13	Aeration Zone with Fixed Film Activated Sludge (IFAS) system arrangement, consist of bio-textile sheets made of polypropylene knitted curtains mounted on SS 316 cages with water-resistant Polypropylene (PP) clamps and fixing accessories and including periodic cleaning system, Electric hoist, flushing arrangement, Material Handling Equipment, Hardware and all allied works complete.	LS			-
6.1.14	Process Air Blower Building with blowers, Air Coolers, EOT Crane, Service water & blower cooling arrangement, Piping and valves, Material Handling Equipment, Ventilation system, Hardware and all allied works complete.	LS			-
6.1.15	Alum solution preparation and dosing which includes minimum of preparation and dosing pump sets to feed maximum average doses efficiently, agitators, mixing arrangement, flushing arrangement, Channel mounted mixer for alum mixing, Material Handling Equipment, Ventilation system, Hardware with piping and all allied works complete including bulk storage tank and containment structure in case of a spill.	LS			-
6.1.16	Inlet & outlet piping, Distribution Chamber for Secondary Clarifiers with Inlet & Outlet sluice gates, stop logs, weir arrangement, flushing arrangement, piping and valves including Hardware and all allied works complete.	LS			-
6.1.17	Inlet & Outlet piping, Secondary Clarifiers mechanism, Bridge, scum collection with desludging arrangements, Material Handling Equipment, flushing arrangement, piping and valves including Hardware and all allied works complete.	LS			-
6.1.18	Inlet & Outlet piping, Disc Filter Influent & Effluent chamber sluice gates, Weir gates, Stop logs, Disc Filter units with chemical cleaning arrangements. Backwash water system and collection arrangement etc and all allied works complete.	LS			-
6.1.19	Scum pumping station general arrangement, Pump sets, flushing arrangement, scum Handling Equipment, Ventilation system, Hardware with piping, Valves and all allied works complete.	LS			-
6.1.20	Chlorine & any other chemical dosing arrangement, spill containment bund, flushing arrangement, Material Handling Equipment, Ventilation system, Hardware with piping and all allied works complete.	LS			-
6.1.21	Inlet & Outlet piping, Chlorine Contact Tank & Outfall structure with sluice gates, weir gates, Stop logs, mixing arrangement, hardware with piping, valves and all allied works complete, Disk filters.	LS			-

Name of the STP : 20 MLD STP at Koramangala					
Code 06: Commissioning of Mechanical, Electrical and Instrumentation, Control & Automation Works for entire STP plant process including FAT & SAT of 20 MLD capacity plant including TSPS at Koramangala.					
Item	**Description**	**Quantity**	**Price (INR)**	**GST (INR)**	**Total Price including GST (INR)**
(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6) = (4) + (5)**
6.1.22	Dewatering feed pumping system, Submersible mixer arrangement, Sludge feed Pump sets, flushing arrangement, Ventilation system, Material Handling Equipment and Hardware with piping, valves and all allied works complete.	LS			-
6.1.23	Polyelectrolyte dosing systems for sludge dewatering, stirrer arrangement, feeding arrangement, Preparation & Storage tanks, Dosing Pump sets, flushing arrangement, Material Handling Equipment, Ventilation system, Hardware with piping and all allied works complete.	LS			-
6.1.24	Sludge dewatering units, sludge cake screw conveying system with cut gate arrangement and hopper & Collection system, Material Handling Equipment for sludge dewatering units, flushing arrangement, Ventilation system, Hardware with piping and all allied works complete.	LS			-
6.1.25	Inlet & Outlet piping, Plant Drain Sump and Pump Station, Submersible pump sets, Material Handling Equipment,, Hardware with piping, Valves and all allied works complete.	LS			-
6.1.26	Inlet & Outlet piping, Treated water storage Pump Station, Submersible pump sets, Material Handling Equipment, Hardware with piping, Valves and all allied works complete.	LS			-
6.1.27	Inlet & Outlet piping, Plant water Pump Station, Submersible pump sets, Material Handling Equipment, Sluice gates, Weir gates, Stop log gates, Hardware with piping, Valves, All Plant Piping works and all allied works complete.	LS			-
6.1.28	Inlet & Outlet piping, Tanker filling station, Submersible pump sets, Material Handling Equipment, Hardware with piping, Valves and all allied works complete.	LS			-
6.1.29	Flushing arrangement for all chemical & Sludge Material Handling systems, Dewatering Pumps including piping and all allied works in all sludge & Chemical Material Handling pump houses complete.	LS			-
6.1.30	Potable water system including pumps with Hardware, piping, Valves and all allied works complete.	LS			-
6.1.31	Fire Fighting system for the whole plant (inclusive of fire alarm, fire detection, fire extinguishing system), Tools Kit, Air conditioning system for SCADA control room & Administration and Laboratory Building and all allied works complete.	LS			-
6.1.32	Air intake blowers with piping and valves, filters beds, Bio-filters, suction-filters, air duct work, mist eliminators, and dehumidifiers and all allied works complete for Odour Control Units.	LS			-
6.1.33	Carrying out the SOTE test in presence of Client/ client representative Engineer at original manufacturer site for selected diffuser membranes from supplied lot with test results, and calculation sheet, photo and provide all of test results with necessary document including its data and photo and the its test results.	LS			-
6.1.34	**The bidder shall list here details of any additional items (all areas of the works) required for a complete installation.**				

Name of the STP : 20 MLD STP at Koramangala					
Code 06: Commissioning of Mechanical, Electrical and Instrumentation, Control & Automation Works for entire STP plant process including FAT & SAT of 20 MLD capacity plant including TSPS at Koramangala.					
Item	**Description**	**Quantity**	**Price (INR)**	**GST (INR)**	**Total Price including GST (INR)**
(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6) = (4) + (5)**
a		LS			-
b		LS			-
c		LS			-
d		LS			-
e		LS			-
Sub Total of 6.1			**-**	**-**	**-**
6.2	**Complete Installation, testing and commissioning of Electrical system as defined in the Bidding Document.**				
6.2.1	**Installation, testing and commissioning of 11kV underground Cables, Termination Kits at following locations as per scope, specification and drawings.**				
6.2.1.1	11kV Outdoor cable termination at Tariff Metering Unit / BESCOM.	LS			-
6.2.1.2	11kV Indoor cable terminations at incomer and outgoings of 11kV Metal Enclosed Switchboard of Sewage Treatment Plant.	LS			-
6.2.1.3	11kV Outdoor cable terminations at primary side of 11kV / 0.433 kV Transformers of Sewage Treatment Plant.	LS			-
6.2.1.4	11kV XLPE Cable from Metering Unit to incomer of 11kV Metal Enclosed Switchboard of Sewage Treatment Plant.	LS			-
6.2.1.5	11kV XLPE Cables from 11kV Metal Enclosed Switchboard to Primary cable end boxes of 11kV/0.433kV Transformers of Sewage Treatment Plant.	LS			-
6.2.1.6	11kV XLPE Cable from existing Metering Unit to Proposed 11kV Metal Enclosed Switchboard if applicable.	LS			-
6.2.1.7	11kV XLPE Cable from Proposed 11kV Metal Enclosed Switchboard to 11kV Metal Enclosed Switchboard at Existing Sewage Treatment Plant if applicable.	LS			-
6.2.1.8	11kV Cable Straight through joints.	LS			-
6.2.2	**Complete Installation, testing and commissioning of Electrical equipments at Sewage Treatment Plant Substation Building & Process Air Blower Building as per scope, specification and drawings.**				
6.2.2.1	11kV Metal Enclosed Switchboard with VCBs.	LS			-
6.2.2.2	Diesel Generator Set complete with AMF Control Panel.	LS			-
6.2.2.3	11kV / 0.433kV Transformers with OLTC.	LS			-
6.2.2.4	LT Non Segregated Aluminium Bus ducts with necessary supporting structure.	LS			-
6.2.2.5	415V Switchgear PCC.	LS			-
6.2.2.6	415V DG PCC.	LS			-

Name of the STP : 20 MLD STP at Koramangala					
Code 06: Commissioning of Mechanical, Electrical and Instrumentation, Control & Automation Works for entire STP plant process including FAT & SAT of 20 MLD capacity plant including TSPS at Koramangala.					
Item	**Description**	**Quantity**	**Price (INR)**	**GST (INR)**	**Total Price including GST (INR)**
(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6) = (4) + (5)**
6.2.2.7	415V Capacitor banks with Automatic Power Factor Correction Relay.	LS			-
6.2.2.8	110V D.C Battery Bank, Battery Charger with D.C Distribution Board.	LS			-
6.2.3	**Complete Installation, testing and commissioning of Motor Control Centres, Distribution boards etc at various locations in TSPS & Sewage Treatment plant with following major equipment, items as per scope, specification and drawings.**				
6.2.3.1	TSPS MCC.	LS			-
6.2.3.2	Process Air Blower MCC.	LS			-
6.2.3.3	Headwork's MCC.	LS			-
6.2.3.4	Centrifuge MCC.	LS			-
6.2.3.5	RAS MCC.	LS			-
6.2.3.6	Chlorine MCC.	LS			-
6.2.3.7	Main Lighting DB.	LS			-
6.2.3.8	Variable Frequency Drives MCC, Active Harmonic Filters (AHF)	LS			-
6.2.3.9	Local Push Button Stations.	LS			-
6.2.3.10	Miscellaneous works-Distribution Board (Valve DB, Fan DB, Power DB, Auxiliary DB etc.,).	LS			-
6.2.4	**Complete Installation, testing and commissioning of Lighting System at TSPS & Sewage Treatment Plant with following major equipment, items as per scope, specification and drawings.**				
6.2.4.1	Lighting Fixtures.	LS			-
6.2.4.2	Lighting panels.	LS			-
6.2.4.3	Switchboards, Receptacles, Power Plug & Sockets, Switches, Ceiling fans with regulators etc.,	LS			-
6.2.4.4	Point wiring with conduits, wires, supports etc for Lighting fixtures, Receptacles, Ceiling fans etc.,	LS			-
6.2.4.5	Street Lighting and Area Lighting poles with Junction boxes and Over hang.	LS			-
6.2.4.6	Solar PV System for Street Lighting.	LS			-
6.2.5	**Complete Installation, testing and commissioning of L.T Cabling System, HT/LT Cable Carrier System at TSPS & Sewage Treatment Plant with following major components as per scope, specification and drawings.**				
6.2.5.1	L.T cables.	LS			-
6.2.5.2	L.T Cable termination with glands and lugs.	LS			-
6.2.5.3	Cable trays on supports for both LT and HT Cables.	LS			-
6.2.5.4	Hume Pipe.	LS			-

Name of the STP : 20 MLD STP at Koramangala					
Code 06: Commissioning of Mechanical, Electrical and Instrumentation, Control & Automation Works for entire STP plant process including FAT & SAT of 20 MLD capacity plant including TSPS at Koramangala.					
Item	**Description**	**Quantity**	**Price (INR)**	**GST (INR)**	**Total Price including GST (INR)**
(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6) = (4) + (5)**
6.2.6	**Installation, testing and commissioning of Earthing & Lightning Protection System at TSPS & Sewage Treatment Plant with following major components as per scope, specification and drawings.**				
6.2.6.1	Earthing Conductor for outdoor main grid.	LS			-
6.2.6.2	Earthing Conductor for indoor main grid.	LS			-
6.2.6.3	Earthing Conductors for outdoor equipments and Junction Boxes.	LS			-
6.2.6.4	Lightning Protection system with Arrestors, Down Conductors, Test Links, and Counters.	LS			-
6.2.6.5	Earthing Conductor for indoor equipments.	LS			-
6.2.6.6	Treated Earth pits.	LS			-
6.2.6.7	Lightning System Earth pits.	LS			-
6.2.7	**Complete Installation, testing and commissioning of safety procedures with Signage for Electrical Equipments at TSPS & Sewage Treatment Plant as per scope, specification and drawings.**	LS			-
6.2.8	**The bidder shall list here details of any additional items required for a complete installation.**				
6.2.8.1		LS			-
6.2.8.2		LS			-
6.2.8.3		LS			-
6.2.8.4		LS			-
6.2.8.5		LS			-
Sub Total of 6.2			**-**	**-**	**-**
6.3	**Complete Installation, testing and commissioning of Instrumentation, Control & Automation system as defined in the Bidding Document.**				
6.3.1	Complete Installation, testing and commissioning of Instrumentation system as per Equipment listed in Price Schedule 3 and all other required Equipments as per Tender specifications.	LS			-
6.3.2	Complete Installation, testing and commissioning of control and Automation system as per Equipment listed in Price Schedule 3 and all other required Equipments as per Tender specifications.	LS			-
6.3.3	Complete Installation, testing and commissioning of Laboratory system as per Laboratory Equipment listed in Price Schedule 5 and all other required setup facilities as per Tender specifications.	LS			-

Name of the STP : 20 MLD STP at Koramangala					
Code 06: Commissioning of Mechanical, Electrical and Instrumentation, Control & Automation Works for entire STP plant process including FAT & SAT of 20 MLD capacity plant including TSPS at Koramangala.					
Item	**Description**	**Quantity**	**Price (INR)**	**GST (INR)**	**Total Price including GST (INR)**
(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6) = (4) + (5)**
6.3.4	Factory acceptance tests (FAT) for all instrumentation, control and automation system, as required under specifications.	LS			-
6.3.5	Site acceptance tests (SAT) for all instrumentation, control and automation system in combination and co-ordination with process, mechanical (individual vendor supplied systems) and electrical system's SAT test's, inclusive of interoperability tests, Integration with existing CP-24 and MIS-2 SCADA system as required under specifications.	LS			-
6.3.6	**The Bidder shall list here details of any additional items (all areas of the Works) required for complete installation.**				
a		LS			-
b		LS			-
c		LS			-
d		LS			-
e		LS			-
Sub Total of 6.3			**-**	**-**	**-**
6.4	**Integration Testing and Commissioning of the Entire System.**				
6.4.1	**Complete Integration Testing and Commissioning of the Entire System - TSPS, STP.**	LS			-
6.4.2		LS			-
6.4.3		LS			-
6.4.4		LS			-
6.4.5		LS			-
Sub Total of 6.4			**-**	**-**	**-**
Total (Sub Total 6.1+Sub Total 6.2+Sub Total 6.3+Sub Total 6.4)			**-**	**-**	**-**

Name of the STP : 20 MLD STP at Koramangala						
Code 07: Operation and Maintenance of STP of 20 MLD capacity plant including TSPS along with required manpower, chemicals, maintenance, transportation and disposal of screened material, grit and sludge cost, but excluding electricity charges at Koramangala for Seven (7) years.						
Item	**Description**	**Unit**	**Quantity**	**Unit rate (INR)**	**GST in INR**	**Total Price including GST (INR)**
(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7) = (4) X {(5) + (6)}**
7.0	**Operation and Maintenance for 7 Years.**					
7.1	**First Year of O&M.**					
7.1.1	+ Manpower for at minimum Plant Manager, Shift In charge, Plant Operator, Plant Chemist, Lab Assistant, Fitter / Mechanic, Electrician, ICA Technician, Helpers, Gardener/Sweeper, Watchmen and any other man power that required for complete operation of the plant as per the tender document.	Job Per year	1			-
7.1.2	**Chemical Usage**					
7.1.2.1	Chlorine ++ Total quantity ---------- Tonne per year. (Bidder to mention the quantity)	Tonne Per year				-
7.1.2.2	Poly Electrolyte++ Total quantity ---------- Tonne per year. (Bidder to mention the quantity)	Tonne Per year				-
7.1.2.3	Alum++ Total quantity ---------- Tonne per year. (Bidder to mention the quantity)	Tonne Per year				-
7.1.2.4	NaOH Total quantity ---------- Tonne per year. (Bidder to mention the quantity)	Tonne Per year				-
7.1.2.5	Laboratory chemicals	Tonne Per year				-
7.1.2.6	Laboratory consumables (glass wares etc.,).	LS	1			-
7.1.2.7	Any maintenance parts and maintenance consumables.	LS	1			-
7.1.3	(i) Trouble shooting and routine preventive maintenance for Pump Mechanical seals, Pump Bearings etc complete. (ii) Trouble shooting and routine preventive maintenance schedule for Electrical equipments, fuses, cables, starters etc complete. (iii) Network Operating charges for Wireless communication System (GPRS gateway). (iv) Including all other software updates, consumables, stationeries. (v) Instrumentation(Analog) & Control Cables and Power Cables, OFC, etc., (vi) AMC for complete ICA Equipments, painting for field Instrument enclosures. (vii) Also Refer Part 16 of volume 2 in Tender Documents.	LS	1			-
7.1.4	**Transportation and Disposal**	LS	1			-
7.1.4.1	Screen.	LS	1			-
7.1.4.2	Grit.	LS	1			-
7.1.4.3	Sludge.	LS	1			-
7.1.5	**Insurance**	LS	1			-
7.1.6	**The Bidder shall list here details of any additional items required for O & M.**	LS	1			-
7.1.6.1		LS	1			-
7.1.6.2		LS	1			-
7.1.6.3		LS	1			-

Name of the STP : 20 MLD STP at Koramangala						
Code 07: Operation and Maintenance of STP of 20 MLD capacity plant including TSPS along with required manpower, chemicals, maintenance, transportation and disposal of screened material, grit and sludge cost, but excluding electricity charges at Koramangala for Seven (7) years.						
Item	**Description**	**Unit**	**Quantity**	**Unit rate (INR)**	**GST in INR**	**Total Price including GST (INR)**
(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7) = (4) X {(5) + (6)}**
7.2	**Sub Total of 7.1 for First Year O & M**			**-**	**-**	**-**
7.3	**Total for Seven Years O & M = First Year O & M x 7 Years**	Per Year	**7**	**-**	**-**	**-**
7.4	Training of BWSSB personnel and all other inspection, Testing, Repair, and Handing over activities required during sixth year of O & M or as directed.	JOB	1			-
7.5	**Total (Sub Total 7.3+Sub Total 7.4)**			**-**	**-**	**-**

Notes:

+ The bidder shall quote the cost for manpower which includes man month rate including accommodation, transportation allowance, etc. complete

+ + The payment for the chemicals will be made to the Contractor as per actual consumption during the O&M period and as per contract provision

** Payment for Electrical Usage will be made directly to KPTCL by Employer as defined in tender document

Price quoted for the first year of O&M shall be considered for payment for subsequent years O & M as per price adjustment clause stated in Volume 1 of the bid document upto 7 years of O&M period

Name of the STP : 20 MLD STP at Koramangala						
Recommended Spare Parts.						
Item	**Description**	**Quanitty**	**Ex. Works (INR)**	**GST (INR)**	**Local Transport (INR)**	**Total Price including GST (INR)**
(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)=(4+5)+6**
8.0	**Recommended Spare Parts**					
8.1	**Mechanical**					
8.1.1	**TSPS**					
8.1.1.1		LS				-
8.1.1.2		LS				-
8.1.1.3		LS				-
8.1.1.4		LS				-
8.1.1.5		LS				-
8.1.1.6		LS				-
8.1.1.7		LS				-
8.1.1.8		LS				-
8.1.1.9		LS				-
8.1.1.10		LS				-
8.1.2	**Inlet Works**					
8.1.2.1		LS				-
8.1.2.2		LS				-
8.1.2.3		LS				-
8.1.2.4		LS				-
8.1.2.5		LS				-
8.1.2.6		LS				-
8.1.2.7		LS				-
8.1.3	**Secondary Treatment**					
8.1.3.1		LS				-
8.1.3.2		LS				-
8.1.3.3		LS				-
8.1.3.4		LS				-
8.1.3.5		LS				-
8.1.3.6		LS				-
8.1.3.7		LS				-
8.1.3.8		LS				-
8.1.3.9		LS				-
8.1.3.10		LS				-
8.1.3.11		LS				-

Name of the STP : 20 MLD STP at Koramangala						
Recommended Spare Parts.						
Item	**Description**	**Quanitty**	**Ex. Works (INR)**	**GST (INR)**	**Local Transport (INR)**	**Total Price including GST (INR)**
(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)=(4+5)+6**
8.1.3.12		LS				-
8.1.4	**Air Blower Building**					
8.1.4.1		LS				-
8.1.4.2		LS				-
8.1.4.3		LS				-
8.1.5	**Alum Dosing System**					
8.1.5.1		LS				-
8.1.5.2		LS				-
8.1.5.3		LS				-
8.1.5.4		LS				-
8.1.5.5		LS				-
8.1.5.6		LS				-
8.1.6	**Disc Filters**					
8.1.6.1		LS				-
8.1.6.2		LS				-
8.1.6.3		LS				-
8.1.7	**Chlorination System**					
8.1.7.1		LS				-
8.1.7.2		LS				-
8.1.7.3		LS				-
8.1.7.4		LS				-
8.1.7.5		LS				-
8.1.7.6		LS				-
8.1.7.7		LS				-
8.1.7.8		LS				-
8.1.7.9		LS				-
8.1.7.10		LS				-
8.1.8	**Sludge Handling Units**					
8.1.8.1		LS				-
8.1.8.2		LS				-

Name of the STP : 20 MLD STP at Koramangala						
Recommended Spare Parts.						
Item	**Description**	**Quanitty**	**Ex. Works (INR)**	**GST (INR)**	**Local Transport (INR)**	**Total Price including GST (INR)**
(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)=(4+5)+6**
8.1.8.3		LS				-
8.1.8.4		LS				-
8.1.8.5		LS				-
8.1.8.6		LS				-
8.1.8.7		LS				-
8.1.8.8		LS				-
8.1.8.9		LS				-
8.1.8.10		LS				-
8.1.9	**Scum System**					
8.1.9.1		LS				-
8.1.9.2		LS				-
8.1.9.3		LS				-
8.1.10	**Plant Drain Sump**					
8.1.10.1		LS				-
8.1.10.2		LS				-
8.1.10.3		LS				-
8.1.11	**Plant Water Sump**					
8.1.11.1		LS				-
8.1.11.2		LS				-
8.1.11.3		LS				-
8.1.11.4		LS				-
8.1.12	**Odour Control Units**					
8.1.12.1		LS				-
8.1.12.2		LS				-
8.1.12.3		LS				-
8.1.12.4		LS				-
8.1.13	**Exhaust Fans (Replacement)**					
8.1.13.1	Exhaust Fans	LS				-
8.1.14	**Miscellaneous Items (Replacement)**					

Name of the STP : 20 MLD STP at Koramangala						
Recommended Spare Parts.						
Item	**Description**	**Quanitty**	**Ex. Works (INR)**	**GST (INR)**	**Local Transport (INR)**	**Total Price including GST (INR)**
(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)=(4+5)+6**
8.1.14.1	Air Conditioning	LS				-
8.1.14.2	Street Lighting	LS				-
8.1.14.3	Decibel Meter and Ambient Temperature Meter	LS				-
8.1.14.4	Earmuffs	LS				-
8.1.14.5	Fresh air hose breathing apparatus	LS				-
8.1.14.6	H2S Gas Detector Meter	LS				-
8.1.15	**Any other details**					
8.1.15.1		LS				-
8.1.15.2		LS				-
8.1.15.3		LS				-
8.1.15.4		LS				-
8.1.15.5		LS				-
8.1.15.6		LS				-
8.1.15.7		LS				-
8.1.15.8		LS				-
8.1.15.9		LS				-
8.1.15.10		LS				-
8.2	**Electrical Equipment & items**					
8.2.1	**11 kV Switchgear**					
8.2.1.1		LS				-
8.2.1.2		LS				-
8.2.1.3		LS				-
8.2.1.4		LS				-
8.2.1.5		LS				-
8.2.1.6		LS				-
8.2.1.7		LS				-
8.2.1.8		LS				-
8.2.1.9		LS				-
8.2.1.10		LS				-
8.2.2	**11/0.433 kV Transformers**					
8.2.2.1		LS				-
8.2.2.2		LS				-
8.2.2.3		LS				-

Name of the STP : 20 MLD STP at Koramangala						
Recommended Spare Parts.						
Item	**Description**	**Quanitty**	**Ex. Works (INR)**	**GST (INR)**	**Local Transport (INR)**	**Total Price including GST (INR)**
(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)=(4+5)+6**
8.2.2.4		LS				-
8.2.2.5		LS				-
8.2.2.6		LS				-
8.2.2.7		LS				-
8.2.2.8		LS				-
8.2.2.9		LS				-
8.2.2.10		LS				-
8.2.3	**415V Metal Enclosed Switchboards (PCC/PMCC/MCC/DBs)**					
8.2.3.1		LS				-
8.2.3.2		LS				-
8.2.3.3		LS				-
8.2.3.4		LS				-
8.2.3.5		LS				-
8.2.3.6		LS				-
8.2.3.7		LS				-
8.2.3.8		LS				-
8.2.3.9		LS				-
8.2.3.10		LS				-
8.2.4	**Diesel Generator Set with AMF Panel**					
8.2.4.1		LS				-
8.2.4.2		LS				-
8.2.4.3		LS				-
8.2.4.4		LS				-
8.2.4.5		LS				-
8.2.4.6		LS				-
8.2.4.7		LS				-
8.2.4.8		LS				-
8.2.4.9		LS				-
8.2.4.10		LS				-
8.2.5	**415V Capacitor banks with Automatic Power Factor Correction Relay**					
8.2.5.1		LS				-
8.2.5.2		LS				-
8.2.5.3		LS				-
8.2.5.4		LS				-

Name of the STP : 20 MLD STP at Koramangala						
Recommended Spare Parts.						
Item	**Description**	**Quanitty**	**Ex. Works (INR)**	**GST (INR)**	**Local Transport (INR)**	**Total Price including GST (INR)**
(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)=(4+5)+6**
8.2.5.5		LS				-
8.2.5.6		LS				-
8.2.5.7		LS				-
8.2.5.8		LS				-
8.2.5.9		LS				-
8.2.5.10		LS				-
8.2.6	**110V D.C Battery, Battery Charger with D.C Distribution Board**					
8.2.6.1		LS				-
8.2.6.2		LS				-
8.2.6.3		LS				-
8.2.6.4		LS				-
8.2.6.5		LS				-
8.2.6.6		LS				-
8.2.6.7		LS				-
8.2.6.8		LS				-
8.2.6.9		LS				-
8.2.6.10		LS				-
8.2.7	**Lighting System , Cabling System , Non Segregated Bus ducts & Earthing System**					
8.2.7.1		LS				-
8.2.7.2		LS				-
8.2.7.3		LS				-
8.2.7.4		LS				-
8.2.7.5		LS				-
8.2.7.6		LS				-
8.2.7.7		LS				-
8.2.7.8		LS				-
8.2.7.9		LS				-
8.2.7.10		LS				-
8.2.8	**Any other details**					
8.2.8.1		LS				-
8.2.8.2		LS				-
8.2.8.3		LS				-
8.2.8.4		LS				-
8.2.8.5		LS				-

Name of the STP : 20 MLD STP at Koramangala						
Recommended Spare Parts.						
Item	**Description**	**Quanitty**	**Ex. Works (INR)**	**GST (INR)**	**Local Transport (INR)**	**Total Price including GST (INR)**
(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)=(4+5)+6**
8.2.8.6		LS				-
8.2.8.7		LS				-
8.2.8.8		LS				-
8.2.8.9		LS				-
8.2.8.10		LS				-
8.3	**Spares to be supplied for Instrumentation, Control & Automation system (PLC based SCADA system) as per Technical Specifications.**					
8.3.1		LS				-
8.3.2		LS				-
8.3.3		LS				-
8.3.4		LS				-
8.3.5		LS				-
8.3.6		LS				-
8.3.7		LS				-
8.3.8		LS				-
8.3.9		LS				-
8.3.10		LS				-
8.3.11		LS				-
8.3.12		LS				-
8.3.13		LS				-
8.3.14		LS				-
8.3.15		LS				-
8.4	**The Bidder shall list here details of any additional items required for a complete installation**					
8.4.1		LS				-
8.4.2		LS				-
8.4.3		LS				-
8.4.4		LS				-
8.4.5		LS				-
8.4.6		LS				-
8.4.7		LS				-
8.4.8		LS				-
8.4.9		LS				-

Name of the STP : 20 MLD STP at Koramangala						
Recommended Spare Parts.						
Item	**Description**	**Quanitty**	**Ex. Works (INR)**	**GST (INR)**	**Local Transport (INR)**	**Total Price including GST (INR)**
(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)=(4+5)+6**
8.4.10		LS				-
	Total		**-**	**-**	**-**	**-**